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General Announcement

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1982-1983 GENERAL ANNOUNCEMENT

McGill University
Montreal

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McGill University
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Montreal, PQ, Canada H3A 2T5
Telephone(514) 392-4311

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The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees, schedules and the revision or cancellation of particular courses.

L'université se réserve le droit d'apporter sans préavis des changements aux renseignements que renferme la présente brochure y compris des modifications touchant les frais de scolarité, les horaires et la révision ou l'annulation de certains cours.

Announcements of the various faculties and schools of the University may be obtained from the Registrar's Office, McGill University, 845 Sherbrooke St. West, Montreal, PQ, Canada H3A 2T5

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8 1982-83 CALENDAR OF DATES

In most faculties and schools lectures begin on Sept. 13, 1982 and end on April 8, 1983. Spring examinations begin on April 14, 1983.

1982

May 3, Mon.	Lectures begin for Summer Session courses starting in May.
May 3, Mon. to May 14, Fri.	Registration for summer term (Masters students only).
May 10, Mon.	Non-thesis forms to be returned to the Thesis Office for Spring 1982 Convocation.
May 10, Mon. to May 28, Fri.	Examinations in 3rd year Dentistry.
May 13, Thurs., and May 14, Fri.	Placement tests in Music History, Theory and Ear Training.
May 14, Fri.	Last day of lectures in 2nd year Dentistry.
May 17, Mon.	Last day to hold Doctoral Orals for Spring 1982 Convocation.
May 20, Thurs., and May 21, Fri.	Supplemental examinations in lecture courses in Music.
May 24, Mon.	VICTORIA DAY. Administrative Offices will be closed.
May 25, Tues. to June 4, Fri.	Examinations in 2nd year Dentistry.
May 28, Fri.	Last day of program in 1st year Dentistry.
June 1, Tues.	Forms nominating examiners for students' theses for Fall 1982 Convocation be returned to the Thesis Office. Lectures begin for Summer Session courses starting in June.
June 3, Thurs.	Health Sciences Convocation.
June 4, Fri.	Agriculture Convocation.
June 8, Wed. and June 9, Wed.	Convocations in all other faculties and schools.
June 14, Mon. to June 18, Fri.	Supplemental examinations in Physical and Occupational Therapy.
June 21, Mon.	Examinations for Management Summer Session 3 credit courses for Monday, Wednesday classes starting in May.
June 22, Tues.	Examinations for Management Summer Session 3 credit courses for Tuesday, Thursday classes starting in May.
June 24, Thurs.	LA FÊTE NATIONALE du QUÉBEC. Administrative offices will be closed (unless changed by legislation).

N.B. After La Fête Nationale du Québec and until Labour Day, Administrative Offices will close each Friday at 12:45 P.M.

June 26, Sat. to Aug. 7, Sat.	French Summer School
June 28, Mon.	Examinations for Summer Session 6 credit courses starting in May.
June 29, Tues.	Examinations for Summer Session 3 credit courses starting in June.
July 1, Thurs.	DOMINION DAY. Administrative Offices will be closed.
July 2, Fri.	Last day to submit completed applications for admission to most departments in the Faculty of Graduate Studies and Research. (Many departments have earlier deadlines. Please verify this date with the individual department).
July 5, Mon.	Lectures begin for Summer Session courses starting in July.

July 28, Wed.	Examinations for Summer Session 6 credit courses starting in June.
July 30, Fri.	Examinations for Summer Session 3 credit courses starting in July (excluding Management courses).
Aug. 2, Mon.	Lectures begin for Summer Session courses starting in August.
Aug. 3, Tues. to Aug. 13, Fri.	Supplemental examinations in Arts, Science, Religious Studies, Nursing and Education.
Aug. 10, Tues. to Aug. 12, Thurs.	Supplemental examinations in Agriculture.
Aug. 16, Mon.	Last day to submit Doctoral theses for Fall 1982 Convocation.
Aug. 9, Mon. to Sept. 3, Fri.	**PRE-REGISTRATION COUNSELLING**
Aug. 9, Mon. to Aug. 20, Fri.	Freshman counselling in Management.
Aug. 16, Mon. to Sept. 3, Fri.	Freshman Orientation and pre-registration counselling in Arts and Science.
Aug. 26, Thurs.	Orientation in 1st year Medicine.
Aug. 31, Tues. to Sept. 1, Wed.	Pre-registration counselling in Nursing.
Sept. 1, Mon. to Sept. 2, Thurs.	Placement tests in Music History, Theory and Ear Training.
	Pre-registration counselling in Physical & Occupational Therapy.
Sept. 2, Thurs. and Sept. 3, Fri	Pre-registration counselling in Engineering, Architecture, B.Sc. (Arch.).
Sept. 3, Fri.	Pre-registration counselling in Physical Education U3.
Sept. 7, Tues.	Pre-registration counselling for B.Ed. U2 & U3 students, Diploma in Education Elementary students, B.Ed. Secondary and Special Areas students in U1 & U2. Orientation in 1st Year Law.
Sept. 8, Wed.	Pre-registration counselling for B.Ed. Elementary U1 students, B.Ed. Secondary students and Special Areas U3, Diploma in Education Secondary and Phys. Ed. U2.
Sept. 8, Wed. and Sept. 9, Thurs.	Auditions for students wishing to take Music Ensemble courses.
Sept. 9, Thurs.	Pre-registration counselling for Phys. Ed. U1.
Aug. 18, Wed.	Examinations for Management 3 credit courses for Monday, Wednesday classes starting in July.
Aug. 19, Thurs.	Examinations for Management 3 credit courses for Tuesday, Thursday classes starting in July.
Aug. 23, Mon.	Last day to submit Masters' theses for Fall 1982 Convocation.
Aug. 26, Thurs.	Examinations for Summer Session 6 credit courses starting in July.
Aug. 27, Fri.	Examinations for Summer Session 3 credit courses starting in August.
Aug. 24, Tues. to Sept. 10, Fri.	**REGISTRATION PERIOD** ** ***Continuing students receive notification of specific times for their registration from their Faculty or School.***
Aug. 24, Tues. to Sept. 10, Fri.	***New students receive a registration schedule with their letter of acceptance. All students are required to appear at the specific times scheduled for their registration.***
Aug. 24, Tues. and Aug. 25, Wed.	Registration for MBA 2 part-time students
Aug. 26, Thurs.	Registration for 1st year Medical students and MBA 2 full-time.
Sept. 3, Fri.	Registration for MBA 1 full-time students.

Sept. 6, Mon.	LABOUR DAY. Administrative Offices will be closed.
Sept. 7, Tues.	Registration for B.Eng., B.Arch., B.Sc.(Arch.) D.D.S., LL.B. and B.C.L.
	Registration for B.Sc.(Agr.), B.Sc.(Agr. Eng.), and B.Sc.(F.Sc.) at Macdonald Campus. (New students at 9:00 A.M. to 12:00 P.M. and returning students at 14:00 P.M. to 16:00 P.M.)
Sept. 7, Tues. to Sept. 9, Thurs.	Registration for graduate students in Education.
Sept. 7, Tues. to Sept. 17, Fri.	Registration in the Faculty of Graduate Studies & Research in individual departments. (Some departments have an earlier registration period. Please contact the individual department.).
Sept. 8, Wed.	Registration for B.A.,B.Com. and 1st year students in the Graduate School of Library Science.
Sept. 9, Thurs.	Registration for B.A., B.S.W., B.Ed., Diploma Programs In Education and M.S.W. and B.Th.
Sept. 10, Fri.	ID cards for Music students. (Counselling and registration period in Music in Strathcona Music Building from Sept. 7 to Sept. 9).
	Registration for B.Sc., B.Sc.(Phys. Ther.), B.Sc. (Occ. Ther.) and B.Sc. (N).
Aug. 30, Mon.	Lectures begin in the Faculty of Medicine for 1st and 2nd year students.
Sept. 7, Tues.	Lectures begin in the Faculty of Dentistry for 1st year students.
Sept. 8, Wed.	Lectures begin in the Faculties of Law, Agriculture, Engineering and the School of Food Science.
Sept. 8, Wed. to Sept. 14, Tues.	Orientation program for 1st year students in the Graduate School of Library Science.
Sept. 9, Thurs.	Lectures begin in the Faculty of Medicine for 3rd year students.
Sept. 13, Mon.	Lectures begin in Arts, Science, Education, B.S.W., Architecture, B.Sc.(Arch.), Management, Music, Nursing, Physical and Occupational Therapy, Graduate Studies and Research, (except the School of Library Science 1st year), Religious Studies and 2nd, 3rd and 4th year students in the Faculty of Dentistry.
Sept. 16, Thurs.	Late registration in all Faculties. (Except Faculty of Graduate Studies & Research).
Sept. 17, Mon.	Last day for departments to return completed registration forms for students in the Faculty of Graduate Studies and Research to the Faculty Office.
Sept. 21, Tues.	B.S.W. Field Practice commences.
Sept. 27, Mon.	All thesis reports for Fall 1982 Convocation to be returned to the Thesis Office.
Sept. 27, Mon. to Oct. 1, Fri.	Arts and Science Course Change (Drop/Add) Period.
Oct. 11, Mon.	THANKSGIVING DAY. Administrative Offices will be closed.
Oct. 13, Wed.	Last day for holding Doctoral Orals for Fall 1982 Convocation.
Oct. 25, Mon. to Oct. 29, Fri.	Arts and Science Verification Period.
Nov. 1, Mon.	Arts and Science deadline for withdrawing ("W") from "A" (Fall Term) courses.
TBA	Fall Convocation.
Nov. 15, Mon.	Last day to submit theses for winter granting of degrees.
Dec. 7, Tues.	Last day of Lectures in all programs in Agriculture and Food Science.
Dec. 10, Fri.	Last day of lectures in Arts, Science, Education, B.S.W., Engineering, Architecture, B.Sc.(Arch.), Law, Management, Music (except practical lessons), Nursing, Physical and Occupational Therapy, Religious Studies and Graduate Studies & Research (except Graduate School of Library Science).
	Arts and Science deadline for withdrawing ("W") from "D" (Full Year) courses.

Dec. 10, Fri. to Dec 21, Tues.	Examinations in Fall term courses given by Agriculture and Food Science.
Dec. 10, Fri. to Dec. 23, Thurs.	Examinations in courses given by the Faculty of Engineering, Architecture and B.Sc.(Arch.).
Dec. 13, Mon. to Dec. 17, Fri.	Examinations in the Graduate School of Library Science.
Dec. 13, Mon. to Dec. 23, Thurs.	Examinations and class tests in courses given by Arts, B.S.W., Education, Law, Management, Music, Nursing, Physical and Occupational Therapy, Religious Studies and Science.
Dec. 17, Fri.	Last day of B.S.W. Field Practice. Last day of practical lessons in Music. Fall term ends in the Graduate School of Library Science. Last day of Fall term lectures for 2nd, 3rd and 4th year students in Dentistry.
Dec. 25, Sat.	CHRISTMAS DAY. Administrative Offices will be closed Fri., December 24th at 5:00 P.M. until Mon., January 3rd, 1983 at 9:00 A.M.
	1983
Jan. 1, Sat.	NEW YEAR'S DAY.
Jan. 3, Mon.	Lectures resume in Dentistry and Law.
	Winter term begins in Law, Graduate School of Library Science (Professional Week).
Jan. 3, Mon. and Jan. 4, Tues.	Placement tests in Music History, Theory and Ear Training.
Jan. 3, Mon. to Jan. 7, Fri.	Winter term Registration and counselling for all new students in Agriculture and Food Science.
Jan. 4, Tues.	B.S.W. Field Practice resumes.
	Orientation for incoming students in Arts and Science.
Jan. 5, Wed.	Winter term lectures begin in Arts, Science, Education (all programs), Engineering, Architecture, B.Sc.(Arch.), Religious Studies, Graduate Studies and Research (except Library Science and Graduate Management), Management, Nursing, B.S.W., Physical and Occupational Therapy and Music.
	M.S.W. lectures and field practice resume. Non-thesis forms to be returned for Winter granting of degrees.
Jan. 5, Wed. and Jan. 6, Thurs.	Registration for MBA 2 part-time students.
Jan. 6, Thurs.	Winter term registration for new students in Arts, Science, Education, Engineering, Law, Management and Religious Studies. Winter term registration for new students in Music in Strathcona Music Building.
Jan. 6, Thurs. and Jan. 14, Fri.	Winter term registration in the Faculty of Graduate Studies and Research.
Jan. 10, Mon.	Lectures begin in Agriculture, Food Science, the Graduate School of Library Science and Graduate Management.
Jan. 10, Mon. and Jan. 11, Tues.	Winter term registration for graduate students in Education.
Jan. 14, Fri.	Last day for departments to return completed registration forms for students in the Faculty of Graduate Studies and Research to the Faculty Office.
Jan. 17 Mon. to Jan. 21, Fri.	Arts and Science Course Change (Drop/Add) Period.
Jan. 28, Fri. to Feb. 5, Sat.	Winter Carnival on Macdonald Campus. Classes as usual except Feb. 1, Tues., Ski Day, classes cancelled.

Feb. 1, Tues.	Forms nominating examiners for student's theses to be returned to the Thesis Office.
Feb. 4, Fri.	Mid-term weekend holiday. (Winter Carnival) (Montreal Campus) Lectures cancelled except Medicine.
Feb. 10, Thurs.	Macdonald College Founder's Day.
Feb. 14, Mon. to Feb. 18, Fri.	Arts and Science Verification Period.
Feb. 15, Tues.	Last day to apply for graduate fellowships.
Feb. 18, Fri. to Feb. 20, Sun.	Macdonald Royal and Open House.
Feb. 21, Mon.	Arts and Science deadline for withdrawing ("W") from "B" (Winter Term) courses.
Feb. 21, Mon. to Feb. 25, Fri.	Study week in Law.
Feb. 24, Thurs. and Feb. 25, Fri.	Study break (All faculties except Agriculture, Dentistry, Law and Medicine and Centre for Continuing Education).
Feb 28, Mon. and Mar. 1, Tues.	Mid-term holiday (Macdonald Campus). Lectures cancelled on Macdonald Campus.
Mar. 14, Mon.	Last day to submit Doctoral theses for Spring 1983 Convocation.
Mar. 21, Mon.	Last day to submit Masters' theses for Spring 1983 Convocation.
Apr. 1, Fri. to Apr. 4, Mon. (inclusive)	EASTER. Administrative Offices will be closed from 5:00 P.M., Thursday, March 31 to 9:00 A.M., Tuesday, April 5.
Apr. 8, Fri.	Last day of lectures in Arts, Science, B.S.W., B.Ed. Elementary and B.Ed. Secondary and Special Areas and Diploma in Education Secondary Programs, B.Arch., B.Sc.(Arch.), Engineering, Law, Management, Music (except practical lessons), Nursing, Physical and Occupational Therapy, Graduate Studies and Research (except Library Science) and Religious Studies.
Apr. 11, Mon. to Apr. 13, Wed.	Study Break (Certain faculties only).
Apr. 13, Wed.	Lectures resume for Special B.S.W. students.
Apr. 14, Thurs.	Last day of lectures for Agriculture and Food Science.
Apr. 14, Thurs. to Apr. 29, Fri.	Examinations in Winter term and "D" courses given by Arts, Science, B.S.W., Education, Engineering, Architecture, B.Sc.(Arch.), Management, Nursing, Physical and Occupational Therapy, Religious Studies and lecture courses in Music. Pre-registration counselling in Management for students returning for the 1983/84 session.
Apr. 15, Fri.	Last day of lectures in Law and 4th year Dentistry. Last day of practical lessons in Music.
Apr. 18, Mon. to Apr. 22, Fri.	Examinations in the Graduate School of Library Science.
Apr. 18, Mon. to Apr. 27, Wed.	Examinations in courses given by Agriculture and Food Science.
Apr. 18, Mon. to Apr. 29, Fri.	Examinations in Law. Examinations in 4th year Dentistry.
Apr. 18, Mon. to May 4, Wed.	Practical examinations in Music.
Apr. 22, Fri.	Winter term ends in the Graduate School of Library Science.
Apr. 25, Mon.	All thesis reports for Spring 1983 Convocation to be returned to the Thesis Office.
Apr. 29, Fri.	Last day of lectures in Diploma in Education Elementary programs. Last day of lectures in 3rd year Dentistry.

May 2, Mon. to May 13, Fri.	Registration for Summer Term. (Masters students only).
May 2, Mon. to May 27, Fri.	Field experience in Diploma in Education Elementary programs.
May 9, Mon.	Non-thesis forms to be returned to the Thesis Office for Spring 1983 Convocation.
May 9, Mon. to May 27, Fri.	Examinations in 3rd year Dentistry.
May 12, Thurs. and May 13, Fri.	Placement tests in Music History, Theory and Ear Training.
May 13, Fri.	Last day of lectures in 2nd year Dentistry.
May 16, Mon.	Last day to hold Doctoral orals for Spring 1982 Convocation.
May 19, Thurs. and May 20, Fri.	Supplemental examinations in lecture courses in Music.
May 23, Mon.	VICTORIA DAY. Administrative Offices will be closed.
May 24, Tues. to June 3, Fri.	Examinations in 2nd year Dentistry.
May 27, Fri.	Last day of program in 1st year Dentistry.
TBA	Health Sciences Convocation.
June 1, Wed.	Forms nominating examiners for students' theses to be returned to the Thesis Office.
June 3, Fri.	Agriculture Convocation.
TBA	Convocations in all other faculties and schools.

UNIVERSITY LIBRARIES CALENDAR 1982/83

1982	
June 24, Thurs.	LA FÊTE NATIONALE DU QUÉBEC. Libraries closed. (unless changed by legislation).
July 1, Thurs.	DOMINION DAY. Libraries closed.
Sept. 6, Mon.	LABOUR DAY. Libraries closed.
Oct. 11, Mon.	THANKSGIVING. Libraries closed.
Dec. 23, Thurs. 1982 to Jan. 2, Sun., 1983	CHRISTMAS-NEW YEAR'S DAY. Hours to be announced.
Dec. 25, Sat.	CHRISTMAS DAY. Libraries closed.
1983	
Jan. 1, Sat.	NEW YEAR'S DAY. Libraries closed.
Feb. 4 Fri.	WINTER CARNIVAL. Libraries open.
Feb. 24, Thurs. to Feb. 25, Fri.	STUDY BREAK (Certain faculties only). Libraries open.
Apr. 1, Fri. to Apr. 4, Mon.	EASTER. Hours to be announced.
Apr. 11, Mon. to Apr. 13, Wed.	STUDY BREAK (Certain faculties only). Libraries open.
May 24, Tues.	VICTORIA DAY. Libraries closed.

Specific information concerning opening hours is available from the individual libraries.

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BERNARD M. ALEXANDOR, Q.C., B.A., B.C.L.(McG.)
Hon. Mr. Justice G. MILLER HYDE, C.D., B.A., B.C.L.(McG.)
PETER M. LAING, Q.C., B.A.(McG.), M.A.(Oxon.), LL.D.(McG.)
Hon. H.C. GOLDENBERG, O.C., O.B.E., Q.C., B.A., M.A., B.C.L., LL.D.(McG.)
W.R. EAKIN, B.A., B.C.L.(McG.)
M. LAIRD WATT, B.Com.(McG.), C.A.
D.R. McROBIE, O.B.E., B.Com.(McG.), F.I.C.A.
J. TAYLOR KENNEDY, B.Eng., M.Eng.(McG.)
L.G. McDOUGALLL, Q.C., B.A., B.C.L.(McG.)
W.H. GAUVIN, C.C., B.Eng., M.Eng., Ph.D.(McG.)

1.4 Members of Senate 1981-82 Session

84 voting members as follows:

EX-OFFICIO

The Chancellor

The Chairman of the Board of Governors

The Principal

Vice-Principal (Academic)

Vice-Principal (Administration and Finance)

Vice-Principal (Planning and Academic Services

Vice-Principal (Research)

Vice-Principal (Macdonald Campus)

Deans of Faculties (12)

Dean of Students

The Director of Libraries

The Director of the Centre for Continuing Education

The President of the McGill University Students' Society

The Vice-President (University Affairs) of the McGill University Students' Society

ELECTED MEMBERS

From the Board of Governors (4)

Faculty of Agriculture (3)

Faculty of Arts (7)

Faculty of Dentistry (1)

Faculty of Education (4)

Faculty of Engineering (4)

Faculty of Graduate Studies and Research (2)

Faculty of Law (2)

Faculty of Management (2)

Faculty of Medicine (6)

Faculty of Music (2)

Faculty of Religious Studies (1)

Faculty of Science (7)

University Libraries (2)

Student Members (14)

Secretary-General and Secretary of Senate

Associate Secretary of Senate

1.5 History

The Hon. James McGill, a leading merchant and prominent citizen of Montreal, who died in 1813, bequeathed an estate of forty-six acres called Burnside Place together with £10,000 to the "Royal Institution for the Advancement of Learning" upon condition that the latter erect "upon the said tract or parcel of land, an University or College, for the purpose of education and the advancement of learning in this Province"; and further upon condition that "one of the Colleges to be comprised in the said University shall be named and perpetually be known and distinguished by the appellation of 'McGill College'."

The Royal Institution, although authorized by law in 1801, had not yet been created but was instituted in 1819. In 1821 it obtained a Royal Charter for a University to be called McGill College. Further delay was occasioned by litigation, and the Burnside estate was not acquired until March 1829. The Montreal Medical Institution which had begun medical lectures at the Montreal General Hospital in 1822 was accepted by the College as its Faculty of Medicine in June 1829. After further litigation, the College received the financial endowment in 1835 and the Faculty of Arts opened its doors in 1843.

Progress, however, was slow until the 1821 Charter was amended in 1852 to constitute the members of the Royal Institution as the Governors of McGill College. Since that time the two bodies have been one. It was first called "The University of McGill College" but in 1885 the Governors adopted the name "McGill University". Even after the Amended Charter was granted, little advance was made until 1855 when William Dawson was appointed Principal. When he retired thirty-eight years later, McGill had over one thousand students and the Molson Hall, the Redpath Museum, the Redpath Library, the Macdonald Buildings for Engineering and Physics and a fine suite of medical buildings had been erected.

Since then the University has continued to grow vigorously. In 1884 the first women students were admitted and in 1899 the Royal Victoria College was opened, a gift of Baron Strathcona, to provide separate teaching and residential facilities for women students. Gradually, however, classes for men and women were merged, and now the University is wholly coeducational. In 1907 Sir William Macdonald established Macdonald College at Ste. Anne de Bellevue, as a residential college for Agriculture, Household Science, and the School for Teachers which is now the Faculty of Education and is located on the Montreal campus. The University's general development has been greatly facilitated by the generosity of many benefactors, great and small, and particularly by the support of its graduates, as regular public funding for general and capital expenditures did not become available until the early 1950's. Since that time government grants have become the major factor in the University's financial operations, but it still relies on private support and benefactions in its pursuit of high quality teaching and research.

The University now comprises twelve faculties and nine schools. At present some twenty thousand students are taking regular university courses. New buildings have been erected or acquired to provide the undergraduate and research facilities needed by the increased student body. In addition, residences, a gymnasium, swimming pools and a winter stadium as well as a University Centre and a concert hall have been added.

The University is also active in providing courses and programs to the community through the Centre for Continuing Education where over fifteen thousand students are registered.

1.6 Incorporated and Affiliated Colleges

INCORPORATED COLLEGES

Macdonald College
Macdonald Campus of
McGill University
Ste. Anne de Bellevue, PQ
H9X 1C0

Macdonald College, founded and endowed by the late Sir William C. Macdonald, is situated at Ste. Anne de Bellevue, about twenty miles from Montreal. The Faculty of Agriculture which includes the School of Food Science, is located on the Macdonald campus.

The Royal Victoria College

3425 University Street
Montreal, PQ H3A 2A8
The Royal Victoria College, a non-teaching college of McGill University, provides residential accommodation for women students.

AFFILIATED THEOLOGICAL COLLEGES

The Montreal Diocesan Theological College

3473 University Street
Montreal, PQ H3A 2A8
Principal – A.C. Capon, M.A.(Cantab.), B.D.(Wycliffe Coll.)

The United Theological College of Montreal

3521 University Street
Montreal, PQ H3A 2A9
Principal – Pierre Goldberger, B.A., B.Sc.(McG.), L.Th.(Montpellier), D.E.A.(Geneva)

The Presbyterian College of Montreal

3495 University Street
Montreal, PQ H3A 2A8
Principal – William Klempa, B.A.(Man.), M.A.(Tor.), B.D.(Knox, Tor.) Ph.D.(Edin.)

NOTE: The above three colleges train students for the ministry and grant certificates for ordination but they have remitted their degree-granting powers to the University.

1.7 Government

McGill University is a Corporation created by a Royal Charter granted by the Crown of the United Kingdom, a general supervisory power being retained by the Crown and exercised through the Governor-General as *Visitor*.

The *Governors* of the University constitute the Royal Institution for the Advancement of Learning, a corporation existing under the laws of the Province of Québec. In them is vested the management of finances, the appointment, in consultation with Senate, of professors, and other duties. Twenty-five of the Governors are elected by the Board from amongst those nominated by its membership committee; five are elected by the Graduates' Society; five are elected by Senate amongst its members, three elected by the non-academic staff from amongst its members, and three elected by students from amongst the student body. The Board elects the Chancellor of the University and also, from amongst its members, a Chairman to preside at its meetings, who may also be the Chancellor. The Chancellor, the Principal and the President of the McGill Students' Society are *ex officio* members.

The Chancellor is presiding officer of Convocation and of joint sessions of the Board of Governors and the Senate.

The Chairman of the Board of Governors is President of the Royal Institution for the Advancement of Learning.

The Principal and Vice-Chancellor is the academic head and chief administrative officer of the University appointed by the Board of Governors after consultation with a Statutory Committee to Nominate a Principal. The Principal is, *ex officio*, Chairman of Senate.

The Senate is the highest academic authority of the University and has control over admission, courses of study, discipline, and degrees. The regulations of Senate are executed by the various faculties and schools which also carry primary responsibility for the educational work of the University.

STUDENT GOVERNMENT

All students registered in the University are members of the Students' Society except for students governed by the constitution of the Macdonald Campus Students' Society and those students registered in the Faculty of Graduate Studies and Research who are non-resident students or full-time members of the teaching staff.

Full details of the constitution, officers and committees of the Students' Society are available from the Students' Society.

2 ADMISSIONS

Admissions Office
McGill University
F. Cyril James Building
845 Sherbrooke St. West
Montreal, PQ H3A 2T5

2.1 General

The academic year at McGill is made up of two sessions, the fall/winter or regular session and the summer session. These are subdivised into the fall term (September to December), the winter term (January to May) and the four months of the sum-

mer session (May, June, July and August). While the majority of students enter in September, it is possible to be considered for admission to most undergraduate programs in January and interested students should contact the Admissions Office for further information.

The deadlines for submission of applications for admission are March 1 for admission in September and either September 1 (non-Québec students) or November 1 (Québec students) for admission in January. All applications must be accompanied by a non-refundable fee of $15 in Canadian funds payable by certified cheque or money order to McGill University.

Students are reminded that fulfilment of the minimum requirements does not guarantee acceptance.

Although our Admissions Officers are always pleased to meet prospective students, a personal interview is not required for admission.

2.2 Length of Program

Québec students who have completed a CEGEP program and who have obtained the Diploma of Collegial Studies are eligible to apply for entrance to the first year of a three-year university program (90 credits in most faculties) leading to one of the following degrees: Bachelor of Arts, Bachelor of Commerce, Bachelor of Education, Bachelor of Engineering, Bachelor of Civil Law (95 credits), Bachelor of Music, Bachelor of Science, Bachelor of Science in Agriculture, Bachelor of Science (Agricultural Engineering), Bachelor of Science (Architecture), Bachelor of Science in Food Science, Bachelor of Science in Nursing, Bachelor of Science in Occupational Therapy, Bachelor of Science in Physical Therapy, Bachelor of Social Work, Bachelor of Theology, or to a four-year program in Dentistry or a five year program leading to a degree in Medicine. After the Bachelor of Science (Architecture) degree, one additional year of study is required for the Bachelor of Architecture degree; a university degree is required for admission to the Bachelor of Laws program.

Students who have completed an appropriate level of education outside the province of Québec may be considered for entrance to a university program requiring three or four years of study (90 to 120 credits).

2.3 Entrance Qualifications

The information in this section relates to those faculties and schools for which admission is handled by the central Admissions Office. These areas include Architecture, Arts, Education (B.Ed), Engineering, Management, Nursing, Occupational Therapy, Physical Therapy, Science, Social Work. Information with respect to entrance requirements for Agriculture, Food Science, Dentistry, Law, Medicine, Music and Religious Studies can be found in Section 3 "Academic Information".

QUÉBEC

Holders of the Diploma of Collegial Studies are considered for admission to the first year of an undergraduate program (90 credits in most faculties). Collegial students should refer to the "Structures d'Accueil aux Études Universitaires de Premier Cycle" to ensure that they are registered in an appropriate pre-university program. Students who complete a French Baccalauréat are also considered for admission to the first year of an undergraduate program.

PROVINCES OF CANADA OTHER THAN QUÉBEC

Entrance to the Faculties of Arts, Education and Management:

Ontario Grade 13 students may be admitted directly to a 90 credit university program if they have completed five appropriate academic subjects (6 credits are granted for each subject with the exception of mathematics, each course of which receives 3 credits). English should be included in the student's program; the four elective courses should be appropriate to the program which the student wishes to enter at McGill. Students wishing to enter the Faculty of Management must include functions and relations and calculus as part of their Grade 13 program. (Calculus II, Integral Calculus, is completed during the first year of study at McGill).

Students having only four appropriate subjects will be required to make up an additional six credits at McGill. A maximum of 30 credits can be granted for studies completed in Grade 13.

Students from provinces other than Québec, Ontario*, and Newfoundland who have completed Grade 12 in academic subjects appropriate to the Faculty which they wish to enter may be considered for admission to a university program in Arts, Education, or Management requiring the completion of 120 credits (normally four years of study). Students from Newfoundland are required to have completed Grade 11 plus one full year of an appropriate undergraduate program at Memorial University or elsewhere.

Entrance to the Faculty of Science:

All programs in the Faculty of Science require that the student complete introductory college level courses in the following: biology (one semester), general chemistry (two semesters), physics (mechanics, electricity and magnetism, waves, optics), differential and integral calculus. Students who have completed these courses with satisfactory performance prior to admission are given credit and/or exemption.

Ontario Grade 13 courses in biology and chemistry are accepted for exemption. Students who ha

included calculus and physics in their program are required to complete an additional semester of calculus and physics at McGill unless they pass the Placement Tests which may be written at McGill prior to registration. Students planning application to the Faculty of Science should follow a pre-science academic program including mathematics. A student who has completed Grade 13 is considered for admission to a university program requiring the completion of the difference between 120 credits and the number of credits which can be granted. A maximum of 30 credits can be granted for appropriate Grade 13 work.

Students from provinces other than Québec, Ontario*, and Newfoundland who have completed Grade 12 in appropriate subjects may be considered for admission to a university program requiring the completion of 120 credits (normally four years of study). Students should have completed a course in functions or trigonometry. Courses in chemistry and physics are recommended. Students from Newfoundland are required to have completed Grade 11 plus one full year of an appropriate undergraduate program at Memorial University or elsewhere. Further information can be obtained by writing to the Admissions Office.

Entrance to the School of Nursing:

Ontario Grade 13 students are considered for entrance on essentially the same basis as applicants to the Faculty of Science (see above). However, as organic chemistry (3 credits), electricity and magnetism (3 credits), and integral calculus (3 credits) are prerequisite courses which must be taken in addition to the regular degree program, students must take an additional semester in the School or elsewhere prior to admission. A student who can manage to complete both organic chemistry and integral calculus during the summer after Grade 13 will be given consideration for admission to a three-year program, although preference will be given to those students who have completed all the prerequisite courses. If admitted lacking electricity and magnetism, the student would probably be required to take the course during the summer after first year. It is very unlikely that it could be taken concurrently.

Admission from other Canadian provinces is as for Science. Students who are admitted to an eight semester program in Nursing take basic science courses in their first year. These students **must** also complete a course in organic chemistry during the summer after their first year of study if they are to advance to the first year of the professional program.

*Exceptions are sometimes made in the case of Grade 12 students who have maintained an average of over 80% in grades 10, 11 and 12 and who have included appropriate subjects in their program of study. Such students may apply to a program requiring the completion of 120 credits or eight semesters (normally four years of study) in the following faculties and schools: Arts, Education, Engineering, Management, Nursing, Science.

Entrance to the School of Physical and Occupational Therapy:

Students who have completed an appropriate Grade 13 progam in Ontario plus one semester in each of electricity and magnetism, organic chemistry, and integral calculus at a recognized university may apply for admission to a three year program.

Grade 13 students who have not completed the courses mentioned and students who have completed Grade 12 in other provinces should apply for admission to Science. Upon completing one year of study in appropriate courses application may be made for admission to Physical or Occupational Therapy.

Entrance to the Faculty of Engineering and School of Architecture:

Students who have completed Grade 13 Ontario, Grade 12 in other Canadian provinces, or first year university in Newfoundland and who have a strong foundation in mathematics (including a course in trigonometry or functions) chemistry, and physics may be considered for admission to a four year program (eight semesters) in the Faculty of Engineering.

Students who have completed both Grade 12 and/or Grade 13 Ontario plus either a three-year program in technology at a community college or institute of technology, the first year of a four-year program at a university, or an equivalent qualification, may be considered for admission to a three-year (six semester) program in the Faculty of Engineering. Applicants who have not completed all the appropriate prerequisite courses to qualify them for admission to a three-year program, but who are otherwise admissible on the basis of their academic record, may be considered for admission to a program requiring one or two additional semesters to complete the degree.

It is not possible to apply for admission to Architecture on the basis of Grade 12, Grade 13, or first year university in Newfoundland. Application to the School of Architecture can be made after one year of study in either the Faculty of Engineering or the Faculty of Science.

Entrance to Other Faculties:

High school graduates are not eligible to apply for admission to the Faculties of Dentistry, Law, or Medicine. A minimum of two to three years of study in the Faculties of Arts or Science is required before seeking admission to Dentistry. A Bachelor's degree is necessary to enter the Faculty of Medicine. A minimum of one year of study in the Faculty of Arts is required before a student may seek entry to the School of Social Work. Admission requirements for the Faculty of Law may be found in Section 3.8.

Students who require information relative to admission to Agriculture, (Food Science), Music, or

Religious Studies should consult the appropriate faculty announcement.

NON-CANADIAN APPLICANTS

Entrance to the Faculties of Arts, Education and Management:

High school graduates from the UNITED STATES may be admitted to an undergraduate program requiring the completion of 120 credits in the Faculties of Arts, Education, and Management. All applicants should have followed academic programs designed for university entrance. Applicants to the Bachelor of Commerce program must present a strong background in mathematics, including a course in trigonometry or functions. Students who have passed Advanced Placement examinations in appropriate subjects with a grade of "3" or better will be granted some advanced standing.

Students from the UNITED KINGDOM and COMMONWEALTH countries may be admitted directly into a university program requiring the completion of 90 credits (three years) in the Faculties of Arts, Education, and Management if they have completed three Advanced Level papers. An average grade of "C" or better, with not more than one paper having a grade lower than "D" is required. It is expected that most students will have completed five G.C.E. papers at the Ordinary Level; one Ordinary Level paper must be English Language.

In special cases, students who have fewer than three Advanced Level papers may be offered admission to the Faculties of Arts, Education, or Management; however, these students will be required to complete additional credits to fulfil the degree requirements.

Applicants to the Faculty of Management must have Advanced Level results in mathematics.

Students who have not written Advanced Level examinations but who have very good grades in at least five appropriate Ordinary Level papers PLUS one full year of formal schooling beyond Ordinary Level, in a suitable academic program at a recognized school or college, may be considered for entrance to an undergraduate program requiring the completion of 120 credits (four years) in the Faculties of Arts, Education, and Management.

Entrance to the Faculty of Science:

The programs in the Faculty of Science have been designed on the assumption that the student has completed, or will complete at McGill, the equivalent of introductory college-level courses in biology, chemistry, physics, and mathematics. These courses are referred to as prerequisite courses.

Graduates from Grade 12 in the UNITED STATES are considered for admission to a university program requiring the completion of the difference between 120 credits and the number of prerequisite credits they have earned. An Advanced Placement science course is considered the equivalent of 6 prerequisite credits; a grade of "3" or better is required for Advanced Placement credit to be granted. All applicants should have a strong background in mathematics (including a course in trigonometry or functions). Chemistry and physics are recommended. Biology is also desirable in the case of a student applying to one of the biological science programs.

Students from the UNITED KINGDOM and COMMONWEALTH countries are normally required to have completed examinations in five different G.C.E. subjects including English, chemistry, mathematics and physics, at least two of which must be at the Advanced Level. An average grade of "C" or better, with no more than one subject having a grade of "D", is also required. Such students are considered for admission to a university program requiring the completion of the difference between 120 credits and the number of prerequisite credits they have earned. Each G.C.E. Advanced Level paper in a science subject (biology, chemistry, mathematics, physics) with a grade of "D" or better is granted the equivalent of 10 prerequisite credits; a maximum of 30 credits can be granted for Advanced Level results (a maximum of 10 credits is granted for papers in mathematics).

Students who have not written Advanced Level examinations but who have very good grades in at least five appropriate Ordinary Level papers, PLUS one full year of formal schooling beyond Ordinary Level in a suitable academic program at a recognized school or college, may be considered for entrance to an undergraduate program requiring the completion of 120 credits.

Entrance to the School of Nursing:

Graduates from Grade 12 in the UNITED STATES are considered for admission on the same basis as for Science (see above). Students who are admitted take basic science courses in their first year. These students must also complete a course in organic chemistry during the summer after their first year of study if they are to advance to the first year of the professional program.

Students from the UNITED KINGDOM and COMMONWEALTH countries must have completed G.C.E. Advanced Level examinations in biology, chemistry, mathematics, and physics, and must have achieved a grade of "C" or better in each if they wish to be considered for admission to a three-year program of study. Students who lack these qualifications but who meet the entrance requirements for the Faculty of Science may apply for admission to that Faculty. Upon completing one year of study in appropriate courses they may then apply for admission to a three-year program in Nursing.

Entrance to the School of Physical and Occupational Therapy:

Graduates from Grade 12 in the UNITED STATES are not eligible to apply for admission. One year of study in appropriate courses in the Faculty of Science is necessary before applying for admission to Physical or Occupational Therapy.

Students from the UNITED KINGDOM and COMMONWEALTH countries must have completed G.C.E. Advanced Level examinations in biology, chemistry, mathematics, and physics, and must have achieved a grade of "C" or better in each if they wish to be considered for admission to a three-year program of study.

Students who lack these qualifications but who meet the entrance requirements for the Faculty of Science may apply for admission to that Faculty. Upon completing one year of study in appropriate courses they may then apply for admission to a three-year program in Physical Therapy or Occupational Therapy.

Entrance to the Faculty of Engineering and School of Architecture:

Graduates from Grade 12 in the UNITED STATES are considered for admission to a university program in Engineering requiring the completion of eight semesters. Applicants should have a strong background in mathematics (including a course in functions or trigonometry), chemistry, and physics. Students who have passed Advanced Placement examinations in mathematics, chemistry, or physics, with a grade of "3" or better receive some credit towards their program. It is not possible to apply for admission to Architecture on the basis of Grade 12; a minimum of one year of preparatory study in either Engineering or Science is required.

Students from the UNITED KINGDOM and COMMONWEALTH countries may apply for admission to a seven semester program in Engineering if they have passes in five G.C.E. Ordinary Level papers, including English, mathematics, physics, and chemistry, two years of study in Form Six, and passes in Advanced Level papers in mathematics and physics. Applicants should have a grade of "C" or better in mathematics and physics. If the program of study in Form Six has also included one full year of English literature and composition, at least one full year of chemistry (a pass at the Advanced Level is desirable), and an acceptable course in the humanities or social sciences, students can complete the degree in six semesters.

Students who have not written Advanced Level examinations but who have very good grades in at least five appropriate Ordinary Level papers plus one full year of formal schooling beyond Ordinary Level, in a suitable program at a recognized school or college, may be considered for entrance to an undergraduate program requiring the completion of eight semesters.

Admission to the School of Architecture is competitive and applicants are selected primarily on the basis of academic standing. Unless the student has achieved particularly outstanding results in Advanced Level papers in chemistry, mathematics, and physics, it is not possible to offer admission to Architecture prior to the completion of further studies in either Science or Engineering. Practical experience in architectural work is not required but may influence the Admissions Commitee in selecting candidates.

Entrance to Other Faculties:

Students who have completed high school programs may not apply for admission to the Faculties of Dentistry, Law or Medicine; a Bachelor's degree is necessary. Students may seek a transfer to a 90 credit (three-year) program in Social Work after they have successfully completed one year of study in the Faculty of Arts. As the number of students who can be admitted to these programs is severely limited, all students should realize that the completion of undergraduate studies in Arts or Science will not ensure eventual admission to any of the professional programs mentioned.

Students who require information relative to admission to Agriculture, Music, or Religious Studies should consult the appropriate faculty announcement.

National Certificates Accepted for Admission:

Some of the national certificates accepted for admission to McGill are listed below. Depending upon the particular certificate, students are considered for admission to three or four-year programs in most Faculties. It is not possible to apply for admission to Dentistry, Law, or Medicine on the basis of any of the certificates listed. It is not possible to apply for admission to Architecture without further preparatory study in Engineering or Science. (Exceptions: Advanced Level, International Baccalaureate, French Baccalauréat.)

Students requiring more specific information relative to entrance requirements should write to the Admissions Office. Admission is selective and better than average grades are required for admission.

COUNTRY – CERTIFICATE

Australia – Higher School Certificate; University Matriculation Certificate
Belgium – Certificat d'Humanités
Czechoslovakia – Vysvedceni o Maturitni Zkousce
Egypt – General Secondary School Certificate
France – Baccalauréat
Germany – Zeugnis der Reife
Greece – Akadimaiko or Apolitirion
Hong Kong – Advanced Level results
India – Bachelor's degree (with First Division standing)
International Baccalaureate* – Certificate of Baccalaureate**
Iran – Sixth Year Secondary Education Certificate

Iraq – Baccalaureate
Israel – Matriculation Certificate
Italy – Diploma di Maturita Classica; Diploma di Maturita Scientifica
Japan – Graduation Diploma
Lebanon – Lebanese Baccalauréat (2ième partie)
Mexico – Bachilerato Unico
Netherlands – Getuigschrift (Gymnasium or Lyceum)
Nicaragua – Bachilerato en Ciencias y Letras
Norway – Examen Artium
Pakistan – Bachelor's degree (with First Division standing)
Poland – Swiadectwo Dojrzalosci
Sweden – Avgangsbetyg
Switzerland – Federal Maturity Certificate, Type A, B, or C
Turkey – Lise Bitirme Diplomasi
United Kingdom and Commonwealth – Advanced Level results
United States – U.S. High School Diploma
Venezuela – Bachillerato en Ciencias; Bachilerato en Humanidades
Vietnam – Vietnamese Baccalauréat (2ième partie)

2.4 Additional Entrance Requirements

1) Application for admission to undergraduate programs must be made on forms supplied by the Admissions Office BEFORE MARCH 1 if the student is applying for entrance in September. Supporting documents should be sent as soon as they are available if they cannot be sent with the application.

2) STUDENTS FROM THE UNITED STATES must write College Entrance Examination Board tests including the Scholastic Aptitude Test and three Achievement Tests appropriate to the program which they wish to enter at McGill. Applicants to a science or engineering program should select a minimum of two tests from biology, chemistry, mathematics, and physics.

Students from the Eastern United States may obtain information about the tests by writing to:
The College Entrance Examination Board
Box 592
Princeton, New Jersey 08540

Students from the West should write to:
The College Entrance Examination Board
Box 1025
Berkeley, California 94701

*In suitable cases, the Faculty of Law may be prepared to accept applications from holders of the French Baccalaureate and International Baccalaureate for admission to the Civil Law program.

**A maximum of 30 credits is granted for International Baccalaureate results. No credit is granted for Physical Science; students who have written the Physical Science examination may receive credit for physics and/or chemistry by writing a Placement Test at McGill prior to registration.

STUDENTS FROM OVERSEAS are advised to write CEEB Aptitude and Achievement tests to support their application.

3) APPLICANTS WHOSE MOTHER TONGUE IS NOT ENGLISH, and who have not completed a CEGEP program in the province of Québec, must submit acceptable evidence of facility in English BEFORE THEIR APPLICATION FOR ADMISSION CAN BE CONSIDERED. Either The Test of English as a Foreign Language (TOEFL) or The University of Michigan English Language test is acceptable.

TOEFL is preferred by the University. The Test is administered by the College Entrance Examination Board and is easily available throughout the world. The results reach McGill approximately 8 weeks after the Test is taken. IT IS THE STUDENT'S RESPONSIBILITY TO MAKE THE NECESSARY ARRANGEMENTS WITH THE EXAMINING BOARD TO WRITE THE TEST IN THE COUNTRY OF RESIDENCE. Full information about the Test and a registration form may be obtained by writing to: Test of English as a Foreign Language, Box 899, Princeton, New Jersey 08540, U.S.A.

2.5 Transfer Students

McGill University welcomes applications from students wishing to transfer from other universities and colleges. Transfer students are considered for admission on the basis of both their university work and previous studies. In most Faculties, a minimum of 60 credits or four semesters of work must be completed if a degree is to be granted; in the Faculty of Arts, the minimum requirement is 45 credits. The student's admissibility and the number of credits which can be granted are determined only once a formal application and all the necessary supporting documents are received.

2.6 Mature Student Admission

Residents of Canada who will be 23 years of age or older by September 1 (for admission to the Fall Session) or January 1 (for admission to the Winter Session) and who lack the academic background normally required for admission may apply for entrance as mature students. An admissions policy for mature candidates is in effect in the Faculties of Agriculture, Arts, Education, Engineering, Management, Nursing, Religious Studies, Science, and Social Work. Individuals interested in being considered for entrance under this policy should contact the Admissions Office for further information.

The Faculty of Music will consider applicants of 21 years of age or older for admission as mature students.

2.7 Health Requirements for New Students

Along with the letter of acceptance to the University, all students will receive a Medical Questionnaire

complete with a return envelope addressed to the Health Service. Students are requested to complete this questionnaire with the assistance of their physician and to return it in the envelope at the earliest possible date.

COMPULSORY HEALTH INSURANCE FOR NON-CANADIAN STUDENTS

All non-Canadian students and students who are not permanent residents MUST enrol in the McGill Non-Canadian Student Health and Accident Insurance Plan. In general, the policy provides for payment towards hospital, surgical, diagnostic, and other medical expenses.

Premium assessments are made shortly after registration. All participants in the plan will receive their insurance policy and enrolment card at the time of assessment. Enquiries concerning the insurance plan should be directed to the Health Service or the Liaison Officer to the Dean of Students.

2.8 Immigration Information

Non-Canadian and non-permanent resident students **must** first obtain a student visa from a Canadian embassy or consulate in their area. While it is not possible to obtain a student visa until both a letter of acceptance from the University and a certificate of acceptance from the Québec Government have been issued, students are advised to begin the procedures necessary to secure assurance of admission to Canada and to complete the necessary medical papers for the Canadian immigration authorities *as soon as possible after submitting an application for admission to the University*. If offered admission, both a copy of the letter of acceptance from the University and the certificate of acceptance from the Québec Government must be submitted to the immigration authorities to complete the processing of the visa application. Student visas can be renewed annually in Canada subsequent to the student's registration.

A pamphlet which describes Canadian immigration regulations in detail and which contains notes and guidance for students from other countries, is available from all Canadian embassies, consular offices and immigration offices.

2.9 Registration

Registration for the Fall Session takes place early in September and lectures begin shortly thereafter. Complete information is sent with the letter of admission and faculty counsellors are available in the weeks preceding the commencement of lectures to assist in the selection of courses.

2.10 Language Policy

The language of instruction at McGill is English. Students may write term papers and examinations in French, but competence in English is essential to succeed. A summer course, English 128-150C, is offered and it is recommended that students who lack fluency in English take this summer course before embarking on a program of study at McGill. Information and application material may be obtained by writing directly to the Summer Session Office.

2.11 Language Requirement for Professions

Québec law requires that candidates seeking admission to provincially-recognized professional corporations* must possess a working knowledge of the French language, that is, be able to communicate verbally and in writing in that language.

To demonstrate this capability, candidates will be required to pass an examination set by the Office de la langue française, unless they can show that three years of instruction in a French post-primary school have been completed. The professional corporation will require this proof of attendance or of successful completion of the Office examination.

Examinations take place every three months and may be attempted an unlimited number of times.

The examination may be attempted by registered students during the two years prior to the date they can seek admission to the professional corporation. Arrangements for sitting the exam while still a student must be made through the faculty office.

More information may be obtained from the Office de la langue française, Tour de la Bourse, (Place Victoria), 15e étage, Montréal, PQ, H4Z 1G8, Telephone 873-8361.

Students who need to acquire a functional level of proficiency in French may register in courses at either the English and French Language Centre, 3438 McTavish Street, Telephone 392-5727, for courses during the day, or at the Centre for Continuing Education, 772 Sherbrooke Street West, Telephone 392-4901, for courses in the evening.

* McGill degrees and diplomas currently give access to corporations regulating the activities of the following professional groups:

Advocates
Agrologists
Architects
Chartered Accountants
Chartered Administrators
Chartered Appraisers
Chemists
Dentists
Dietitians
Engineers
Industrial Administration Accountants
Industrial Relations Counsellors
Licensed General Accountants
Notaries
Nurses
Occupational Therapists
Physicians
Physiotherapists
Psychologists
Social Workers
Speech Therapists and Audiologists
Urbanists
Vocational Guidance Counsellors

Students already proficient in French but who wish to keep up practice may register in courses at the Department of French Language and Literature, 3460 McTavish Street, Telephone 392-4577, or at the Centre d'études canadiennes-françaises, 3475 Peel Street, Telephone 392-5200.

3 ACADEMIC INFORMATION

3.1 Faculties and Schools

The twelve faculties and nine schools in McGill University offer the following degrees and diplomas: (Further details of programs in each faculty and school are given in the appropriate faculty or school announcement).

3.2 Faculty of Agriculture (Including the School of Food Science)

Macdonald Campus of
McGill University
Ste. Anne de Bellevue, PQ
H9X ICO

DEGREES OFFERED

Bachelor of Science in Agriculture (B.Sc.(Agr.))

Bachelor of Science in Agricultural Engineering (B.Sc.(Agr.Eng.))

Bachelor of Science in Food Science (B.Sc.(F.Sc.))

DIPLOMA OFFERED

Diploma in Agriculture

The Diploma program in Agriculture is under the sponsorship of the Québec Ministry of Agriculture and is administered by the Faculty of Agriculture.

PROGRAMS

Bachelor of Science in Agriculture, B.Sc.(Agr.)

This program leads to professional qualification in Agricultural Science (Agricultural Economics, Agricultural Chemistry, Animal Science, General Agricultural Science, Plant Science, Soil Science) or in one of its related specialized branches in the Biological Sciences (Botanical Sciences, Environmental Biology, Microbiology, Zoological Sciences) and Renewable Resources Development (Land Planning and Environmental Conservation, Community Resource Development, Landscape Studies, Wildlife Resources).

Bachelor of Science in Agricultural Engineering, B.Sc.(Agr.Eng.)

This program leads to professional qualification in Agricultural Engineering. Holders of this degree are eligible for membership in professional engineering societies.

Bachelor of Science in Food Science, B.Sc.(F.Sc.)

This program leads to professional qualifications necessary for Dietetics or Food Science as well as the following areas in Food and Consumer Sciences: Food Chemistry, Food Administration, Nutrition, and Consumer Services. Joint programs with the Faculty of Education leading to the B.Ed., Major in the Teaching of Home Economics and with the Faculty of Management leading to the B.Com., Major in Food Services Administration are also offered.

Diploma in Agriculture

This is a two-year program in practical agriculture designed to prepare students for careers in agricultural production and management.

Extension Service

A comprehensive series of community programs is offered.

ENTRANCE REQUIREMENTS AND APPLICATION

Québec students require a diploma of Collegial Studies in science for entrance to the degree programs (90-115 credits depending on program). Students from outside Québec should inquire at the Registrar's Office, Macdonald Campus, regarding their admissibility.

Students transferring from other faculties or universities will be granted credits towards their degree for courses which they have passed at a satisfactory level and which are considered equivalent to courses offered by the Faculty.

Successful completion of Québec Secondary V is required for admission to the 24-month Diploma in Agriculture program.

By special agreement, the Nova Scotia Agricultural College, Truro, N.S., has arranged to provide its students with a program of studies permitting transfer to the Faculty of Agriculture at Macdonald. Students who have completed such a program of study with satisfactory standing will be admitted to the appropriate year in the Faculty provided that their overall averages and their grades in individual courses are considered satisfactory by the Committee on Admissions.

Application for admission to the Faculty of Agriculture and the School of Food Science may be submitted until June 1 for fall admission and November 1 for January admission and may be obtained from The Registrar, Macdonald Campus of

McGill University, Ste. Anne de Bellevue, PQ H9X 1CO.

GRADUATE PROGRAMS

See the *Announcement of the Faculty of Graduate Studies and Research, Section "A", Agricultural and Applied Sciences.*

3.3 Faculty of Arts

Dawson Hall
853 Sherbrooke St. West
Montreal, PQ H3A 2T6

DEGREES OFFERED

Bachelor of Arts (B.A.)
Bachelor of Social Work (B.S.W.)

PROGRAMS

Three types of programs are available; faculty programs, major programs and honours programs.

A faculty program is an approved coherent selection of courses giving the student a useful concentration in a recognized area. Three fifths of the student's course load in a faculty program is specified, the remaining courses being freely elected from those offered in the Faculties of Science and Arts.

Major programs are more specialized than faculty programs and are usually centred around a specific discipline or department. Between three and four fifths of the course load is specified in the program and the student is free to elect the remaining courses from among the offerings in the Faculties of Science and Arts.

Honours programs require the student to maintain academic performance at a high standard in addition to involving a very high degree of specialization. Joint honours programs are available in many related disciplines.

Listed below are the various programs leading to the B.A. degree.

Honours Programs are offered in the following subjects:

Anthropology
Art History
Classics
East Asian Studies
Economics
English
French
Geography
German
History
History and Philosophy of Science
Italian
Jewish Studies
Linguistics
Mathematics
Middle East Studies
Philosophy
Political Science
Psychology
Religious Studies
Russian
Sociology
Spanish (Department of Hispanic Studies)

Joint Honours are also available. Please consult the appropriate departments.

Major Programs are offered in the following subjects:

Anthropology
Art History
Classics
Economics
English
French
Geography
German
History
Italian
Jewish Studies
Linguistics
Mathematics
Philosophy
Political Science
Psychology
Religious Studies
Russian
Sociology
Spanish (Department of Hispanic Studies)

In addition, the following **interdisciplinary majors and concentrations** are offered:

African Studies
Canadian Studies
Classics and Linguistics
East Asian Studies
Economics and Political Science
French Canada Studies
History and Philosophy of Science
History and Political Science
Humanistic Studies
Industrial Relations
Latin American Studies
Middle East Studies
Modern Languages
Modern Literature
North American Studies
Faculty Program in Mathematics and Computer Science
Faculty Program in Mathematics and Philosophy
Faculty Program in Psychology and Mathematics
Faculty Program in Psychology, General

Minor Programs are available in the following:

Computer Science
Environmental Studies
Women's Studies

Social Work: See the *Announcement of the Faculties of Arts and of Science.*

ENTRANCE REQUIREMENTS

See Section 2.

3.4 Faculty of Dentistry

Strathcona Anatomy and
Dentistry Building
3640 University Street
Montreal, PQ H3A 2B2

DEGREES OFFERED

Doctor of Dental Surgery (D.D.S.)

ENTRANCE REQUIREMENTS AND APPLICATION

The minimum requirement for admission to the four year program in dentistry is the satisfactory completion of a Québec Diploma of Collegial Studies with the appropriate profile or two full years in a university program leading to the B.A. or B.Sc. degree which must include at least one full year course (two semesters) in each of the following subjects:

General biology or zoology (half year of botany and half year of zoology will be accepted, but not one year of botany alone)
Inorganic or general chemistry, with laboratory
Organic chemistry, with laboratory
Mathematics
Physics, with laboratory

Canadian applicants are requested to write the Canadian Dental Association Aptitude Test and have the results sent to the Faculty Student Affairs Office. Detailed information may be obtained from the Administrator, Dental Aptitude Test Program, the Canadian Dental Association, 1815 Alta Vista Drive, Ottawa, Ontario, K1G 3Y6.

Candidates applying from the United States should write the American Dental Association Aptitude Test and have the results sent to the Faculty Student Affairs Office.

Application forms for Admission to the Faculty may be obtained from the Faculty Student Affairs Office. The deadline date for receipt of applications is March 1 of the year in which the candidate is seeking admission.

Entering students are advised to make themselves familiar with the specific regulations of the province or state in which they intend to practise upon graduation and to take the necessary steps to become registered.

For further information see the *Announcement of the Faculty of Dentistry*.

3.5 Faculty of Education

3700 McTavish Street
Montreal, PQ H3A 1Y2

DEGREE OFFERED

Bachelor of Education (B.Ed.)

PROGRAMS

The B.Ed. degree includes the following options:
Elementary – Early Childhood.
Elementary – Later Childhood.
Secondary – Major in one teaching subject.
Secondary – Two subject option.

Special Areas - Art, Second Languages (French or English), Physical Education, Home Economics, and Religious Studies (Protestant, Catholic or Jewish).

ENTRANCE REQUIREMENTS AND APPLICATION

See Section 2.

McGILL DIPLOMA IN EDUCATION PROGRAM

This is a one-year program leading to the McGill Diploma in Education and to a teaching permit for elementary or secondary schools and for Vocational Education subjects in secondary schools. Eligible candidates must normally possess a university degree with a major (six full courses) in one subject taught in elementary or high schools or a minimum of three full courses in each of two such subjects.

For further information see the *Faculty of Education Announcement* and for graduate programs see the *Announcement of the Faculty of Graduate Studies and Research, Section "G", Education.*

PROGRAMS OF PROFESSIONAL DEVELOPMENT FOR TEACHERS

The following part-time programs are offered during summer sessions and/or evenings of the fall and winter terms for teachers who wish to continue their studies:

B.Ed. Degree Program (Elementary Education).

B.Ed.(Vocational Education) Program.

McGill Certificate Programs (30 credits) in Reading Instruction, Special Education, Moral and Religious Education, Second Languages (English or French), Educational Media, Diagnostic and Remedial Teaching of Mathematics, and Social Studies Education.

McGill Certificate in Native and Northern Education (45 credits) for native teachers

McGill Diploma Program in Educational Administration (30 credits)

McGill Diploma Program in College Teaching (30 credits)

McGill Diploma Program in Human Relations and Family Life Education (30 credits)

McGill Diploma in the Psychology and Education of the Gifted (30 credits)

Kindergarten Program for certified elementary school teachers (30 credits)

APPLICATION FORMS

Application forms and further information on all part-time programs of professional development may be obtained from:
General Office
Faculty of Education
392-8868

3.6 Faculty of Engineering (Including the School of Architecture, the School of Computer Science and the School of Urban Planning)

Macdonald Engineering Building
817 Sherbrooke St. West
Montreal, PQ H3A 2K6

Degree programs outlined below are described in detail in the *Announcement of the Faculty of Engineering*. Graduate programs are described in the *Announcement of the Faculty of Graduate Studies*

and Research, Section "E", Physical Sciences and Engineering.

SCHOOL OF ARCHITECTURE

J.W. McConnell Engineering Building
3480 University Street
Montreal, PQ H3A 2A7

Degrees Offered

1) Bachelor of Science (Architecture), (B.Sc.(Arch.))
2) Bachelor of Architecture (B.Arch.)

Entrance Requirements

See Section 2.

FACULTY OF ENGINEERING

Degrees Offered

1) Bachelor of Engineering (B.Eng.), in the departments of Chemical, Civil, Electrical, Mechanical, and Mining and Metallurgical Engineering and Applied Geophysics.

2) Bachelor of Engineering (B.Eng.)(Honours), in the departments of Electrical and Mechanical Engineering.

Entrance Requirements and Application

See Section 2.

SCHOOL OF COMPUTER SCIENCE

Burnside Hall
805 Sherbrooke St. West
Montreal, PQ H3A 2K6

The School of Computer Science offers, in conjunction with the Department of Mathematics, an undergraduate Joint Honours Program and a Faculty Program in Mathematics and Computer Science, and an Honours Program in Computer Science. In addition, students in the Faculty of Arts, Science or Engineering may register in the Minor Program in Computer Science while pursuing a program in another discipline. Further information can be obtained from the *Announcements of the Faculty of Engineering, the Faculty of Arts* and the *Faculty of Science.*

The requirements for entrance into and for successful completion of the Master's and Doctor's programs offered by the School of Computer Science may be found in the *Announcement of the Faculty of Graduate Studies and Research, Section "E", Physical Sciences and Engineering.*

SCHOOL OF URBAN PLANNING

J.W. McConnell Engineering Building
3480 University Street
Montreal, PQ H3A 2A7

Degree Offered (Faculty of Graduate Studies and Research)

Master of Urban Planning (M.U.P.)

Program

For information consult the *Announcement of the Faculty of Graduate Studies and Research, Section "E", Physical Sciences and Engineering.*

3.7 Faculty of Graduate Studies and Research

Dawson Hall
853 Sherbrooke St. West
Montreal, PQ H3A 2T6

The Faculty of Graduate Studies and Research offers programs leading to diplomas and degrees as follows:

DIPLOMAS

Advanced Social Work Practice
Air and Space Law
Engineering Aspects of Arid Land Development
Environmental Remote Sensing
Epidemiology and Health
Exploration Geophysics
Geological Sciences
Mining Engineering
Northern Studies
Occupational Hygiene
Psychiatry
Public Accountancy

MASTER'S DEGREES

The Degree of Master of Architecture (M.Arch.) may be obtained in the following fields:

Architectural Design
Housing Design

The Degree of Master of Arts (M.A.) may be obtained in the following subjects:

Anthropology
Art History
Classics
Communications
Comparative Literature
Economics
Education
English
French
Geography
German
Hispanic Studies
History
Islamic Studies
Italian
Jewish Studies
Linguistics
Mathematics
Musicology
Music Theory
Philosophy
Political Science
Psychology
Religious Studies
Russian
School Music
Sociology

The Master's Degree in Business Administration (M.B.A.)

The Master's Degree in Education (M.Ed.)

The Degree of Master of Engineering (M.Eng.) may be obtained in the following fields of Engineering:

Chemical
Civil
Electrical
Mechanical
Mining and Metallurgical Engineering and Applied Geophysics

Master's Degrees in Law:

1) **The Degree of Master of Civil Law (M.C.L.)** is offered in the Institute of Comparative Law.
2) **The Degree of Master of Laws (LL.M.)** is offered in the Institute of Air and Space Law and in the Institute of Comparative Law.

The Master's Degree in Library Science (M.L.S.)

The Degree of Master of Music (M.Mus.) may be obtained in Composition, Performance, or Sound Recording.

The Master's Degree in Sacred Theology (S.T.M.)

The Degree of Master of Science (M.Sc.) may be obtained in the following subjects:

Agricultural Chemistry
Agricultural Engineering
Anatomy
Animal Science
Biochemistry
Biology
Chemistry
Computer Science
Crystallography
Entomology
Epidemiology and Health
Experimental Surgery
Fluid Mechanics
Geography
Geological Sciences
Health Sciences (Rehabilitation)
Human Communication Disorders
Marine Sciences
Mathematics
Medicine, Experimental
Meteorology
Microbiology and Immunology
Microbiology (Macdonald Campus)
Mining and Metallurgical Engineering and Applied Geophysics
Neurology and Neurosurgery
Otolaryngology
Parasitology
Pathology
Pharmacology
Physics
Physiology
Plant Science
Psychiatry
Psychology
Renewable Resources

The Degree of Master of Science, Applied (M.Sc.A.) may be obtained in the following subjects:

Computer Science
Geological Sciences (Engineering Geology, Mineral Exploration)
Human Communication Disorders
Medical Radiation Physics
Microbiology and Immunology
Nursing
Psychology

The Master's Degree in Social Work (M.S.W.)

The Master's Degree in Urban Planning (M.U.P.)

DOCTORAL DEGREES

The Doctor's Degree in Civil Law (D.C.L.)

The Doctor's Degree in Education (D.Ed.) may be obtained in Elementary School Counselling, Secondary School Counselling, or Student Personnel Counselling

The Doctor's Degree in Music (D.Mus.) may be obtained in Composition

The Degree of Doctor of Philosophy (Ph.D.) may be obtained in the following subjects:

Agricultural Chemistry
Agricultural Engineering
Anatomy
Animal Science
Anthropology
Art History
Biochemistry
Biology
Business Administration (Joint program)
Chemical Engineering
Chemistry
Civil Engineering
Classics
Communications
Computer Science
Economics
Educational Psychology*
Electrical Engineering
English
Entomology
Epidemiology and Health
Experimental Medicine
Experimental Surgery
French
Geography
Geological Sciences
German
History
Human Communication Disorders
Islamic Studies
Linguistics
Marine Sciences
Mathematics
Mechanical Engineering
Meteorology
Microbiology and Immunology
Microbiology (Macdonald Campus)
Mining and Metallurgical Engineering and Applied Geophysics
Neurology and Neurosurgery
Parasitology
Pathology
Pharmacology
Philosophy
Physics
Physiology
Plant Science
Political Science
Psychology
Religious Studies
Renewable Resources
Russian
Social Work
Sociology

For complete information on all programs see appropriate section of the *Announcement of the Faculty of Graduate Studies and Research*. Application forms may be obtained from the Faculty Office.

3.8 Faculty of Law

Chancellor Day Hall
3644 Peel Street
Montreal, PQ H3A 1W9

*Pending full authorization

DEGREES AND DIPLOMA OFFERED

Bachelor of Civil Law (B.C.L.)
Bachelor of Laws (LL.B.)
Combined Bachelor of Civil Law/Master of Business Administration (B.C.L./M.B.A.) or Combined Bachelor of Laws/Master of Business Administration (LL.B./M.B.A.)

PROGRAMS

The period of study for the B.C.L. or LL.B. degree is three years for one degree or four years for both degrees.

Students proceeding to the Québec Bar and notarial profession are required to take additional training after graduation from the Faculty.

Students studying for the Bachelor of Laws degree (LL.B.) may proceed thereafter to the Bar Admission program of one of the Common Law provinces.

Period of study for the Combined Law/M.B.A. program: Four-year program leading to the award of both an M.B.A. and either the B.C.L. or LL.B. degree. This program is of interest to those who contemplate using a law degree in the business community.

ENTRANCE REQUIREMENTS AND APPLICATION

To qualify for admission to the Faculty a student must have obtained second class standing in the B.A. or equivalent degree from a university or college which is recognized by McGill University, or a Diploma of Collegial Studies with a high standing from a Québec College of General and Professional Education (CEGEP). Substantial fluency in both the French and English languages is also required. Students entering the Faculty with a CEGEP diploma must take the B.C.L. degree before they are permitted to proceed to the LL.B. degree. *The attention of candidates holding CEGEP diplomas is drawn to the fact that admission to the Bars of the other provinces may require additional years of pre-law university education. In particular, the Law Society of Upper Canada requires an additional pre-law university year for those holding CEGEP diplomas.* Among applicants who apply for admission to the LL.B. program, preference is given to those intending to proceed to both the LL.B. and B.C.L. degrees.

Candidates wishing to apply for the Combined Law/M.B.A. program MUST have an undergraduate degree in order to be admissible to the M.B.A. program.

Candidates for admission to the Québec Bar must be Canadian citizens and must hold a diploma from a Québec College of General and Professional Education (CEGEP), or a Diploma of Collegial Studies from a Québec university, or a B.A. degree or its equivalent from a university or college of which the degree is recognized jointly by Laval, McGill, Montréal, Ottawa and Sherbrooke Universities and, in addition, by the Bar.

Candidates for admission to the Québec notarial profession must be Canadian citizens and hold a diploma from a Québec College of General and Professional Education (CEGEP), or a Diploma of Collegial Studies from a Québec university, or a B.A. from a university or college whose degree is recognized jointly by Laval, Montréal, McGill, Sherbrooke and Ottawa Universities for admission to their law courses, and also by the Chamber of Notaries.

The deadline for receipt of applications is February 1 of the year in which the candidate is seeking admission. Application forms may be obtained from the Faculty Admissions Office. All inquiries should be addressed to the Faculty.

For further details see the *Announcement of the Faculty of Law* and for graduate programs see *the Announcement of the Faculty of Graduate Studies and Research, Section "F", Social Sciences, Allied Sciences.*

3.9 Graduate School of Library Science (in the Faculty of Graduate Studies and Research)

McLennan Library Building
3459 McTavish St.
Montreal, PQ H3A 1Y1

DEGREE OFFERED

Master of Library Science (M.L.S.)

For details see the *Announcement of the Graduate School of Library Science.*

3.10 Faculty of Management

Samuel Bronfman Building
1001 Sherbrooke St. West
Montreal, PQ H3A 1G5

DEGREE OFFERED

Bachelor of Commerce (B.Com.)

PROGRAMS

General Program

Concentration in one or two of:

Accounting
Entrepreneurship
Finance
Industrial Relations
International Business
Management Information Systems
Management Policy
Management Science
Marketing

Organizational Behaviour and Personnel
Public Sector Management
Urban Analysis and Real Estate

Option in Food Services Administration

Major Programs:

Economics
Industrial Relations
Management Information Systems
Mathematics
Psychology

Honours Programs:

Economics
Economics and Accounting
Economics and Finance

ENTRANCE REQUIREMENTS

See Section 2.

DIPLOMA AND CERTIFICATE PROGRAMS

See Section 3.20

GRADUATE PROGRAMS

See the *Announcement of the Faculty of Graduate Studies and Research, Section "I"* or the *Announcement of the Faculty of Management, Graduate Studies in Management.*

3.11 Faculty of Medicine

McIntyre Medical Sciences Building
3655 Drummond Street
Montreal, PQ H3G 1Y6

DEGREE OFFERED

Doctor of Medicine and Master of Surgery (M.D., C.M.).

ENTRANCE REQUIREMENTS AND APPLICATION

A. Four-Year Program

Applicants must be proceeding towards the satisfactory completion of a course of study leading to the Bachelor's degree at a recognized college or university. All successful candidates must be in receipt of the Bachelor's degree prior to registration in the first year of the medical curriculum. This Faculty does not admit part-time students.

Scientific Requirements:

Chemistry (general) – One full course with laboratory work
Chemistry (organic) – One full course with laboratory work
Physics – One full course with laboratory work
Biology – One full course including studies of biology at the cell and molecular level.
Physiology (human and/or mammalian) – One full course with laboratory work is recommended.

In addition to the scientific requirements, applicants are encouraged to have an adequate preparation in English literature and composition, and mathematics.

ALL APPLICANTS TO THE FOUR-YEAR MEDICAL PROGRAM ARE REQUIRED TO TAKE THE NEW MEDICAL COLLEGE ADMISSION TEST. This test is conducted by the American College Testing Program (P.O. Box 414, Iowa City, Iowa 52240) at various centres in the spring and fall of each year. Applicants can obtain the registration material from the Faculty of Medicine Office or directly from the Iowa City address given above.

B. Five-Year Program

Canadian citizens and permanent residents of Canada living in the Province of Québec, who are currently completing the two-year program leading to a Diploma of Collegial Studies in either the Health Sciences or Pure and Applied Sciences, are eligible to apply for the five-year program. Persons having attended other technical schools or university programs before attending CEGEP are not eligible to apply for the five-year program nor are persons attending any collegial or premedical program in an institution other than a CEGEP.

Students in the five-year program will be registered in the Faculty of Science for the first year (Med-P year). Such applicants will complete the scientific entrance requirements for the four year medical curriculum during the Med-P year. Provided that a satisfactory academic standing is maintained, the student will proceed into the four-year medical curriculum.

C. Advanced Standing

Occasional vacancies created by attrition allow a limited number of transfer students from other medical schools to be accepted into Phase IB (September of second year) or Phase II (Mid-December of second year). No transfer students will be accepted beyond these levels.

Application

Application for admission to the Faculty of Medicine must be made on the special application forms available only from the Office of the Associate Dean (Admissions), Faculty of Medicine, Room 609, McIntyre Medical Sciences Building. The deadline for receipt of the application from Québec residents is March 1. Applicants from outside the Province of Québec are requested to return completed application material no later than December 1.

Students from another medical school who wish to apply for advanced standing are required to submit an official statement of their preliminary education, the medical program they have followed and the standing obtained. This should be accompanied by a calendar of the medical school attended, giving a full statement of the course of study and a

dean's letter of recommendation. In addition, students who wish to transfer from medical schools outside Canada and the United States must have passed the Medical Sciences Knowledge Profile examination. It is the responsibility of the applicant to forward the results of this exam to the Faculty Admissions Office.

For further details see the *Faculty of Medicine Announcement.*

SCHOOL OF HUMAN COMMUNICATION DISORDERS

Beatty Hall, 1236 Pine Ave. West
Montreal, PQ H3A 1A8

DEGREES OFFERED

Master of Science Applied (M.Sc.A.) in Audiology or Speech Pathology

Master of Science Applied (M.Sc.A.) in Auditory-Oral Rehabilitation and Education of Children with Hearing Impairment

PROGRAMS

The School accepts students into the two professional degree programs listed above. The M.Sc.A. in Auditory-Oral Rehabilitation and Education of Children with Hearing Impairment is offered in collaboration with the Department of Educational Psychology. Selected applicants are also accepted into research programs leading to an M.Sc. or Ph.D. degree. For further information see *Faculty of Graduate Studies and Research Announcement, Section "D", Medical and Allied Sciences.*

3.12 Faculty of Music

Strathcona Music Building
555 Sherbrooke St. West
Montreal, PQ H3A 1E3

DEGREE AND DIPLOMAS OFFERED

Bachelor of Music (B.Mus.)
Licentiate in Music (L.Mus.)
Concert Diploma

PROGRAMS

Bachelor of Music

The degree of Bachelor of Music may be obtained in any one of the following fields:

Composition (Major and Honours)

Music History (Major and Honours)

Performance (Major and Honours)

School Music (Major and Honours)

Theory (Honours)

In addition to the regular program in music theory, interdisciplinary programs are offered which combine music theory with studies in one of computer science, English, linguistics, mathematics, philosophy or psychology.

Honours programs are considered prerequisite to graduate studies.

Designated Major

Special programs of study in music may be proposed in consultation with faculty advisers. Such special proposals must be approved by the Chairmen's Committee and by Faculty Council.

Faculty Program

This program is designed to accommodate those students who are either undecided about the area of music in which they wish to specialize, or who are interested in a pattern of specialization not provided in the established major and honours programs, or who are interested in combining studies in music with studies in other disciplines.

MINOR PROGRAM

Minor in Jazz Performance

Students enrolled in a B.Mus. program may elect to undertake a Minor in Jazz Performance. This program combines work in jazz improvisation with big band experience.

Licentiate in Music

The Licentiate in music is offered in Performance and is designed for advanced instrumentalists and singers who wish to concentrate on their practical subject while limiting their theoretical studies to basic areas in history, theory and ear training.

Concert Diploma

This is a post-Licentiate diploma for highly-gifted instrumentalists and singers who demonstrate the talent and capacity for a professional performance career.

For details of these programs, please consult the *Announcement of the Faculty of Music.*

Music Credit Options in Other Faculties

The Faculty of Music offers three series of courses that may be taken for credit by students in other faculties. For details on these courses, please consult the Music section of the *Announcement of the Faculties of Arts and Service.*

McGill Conservatory of Music

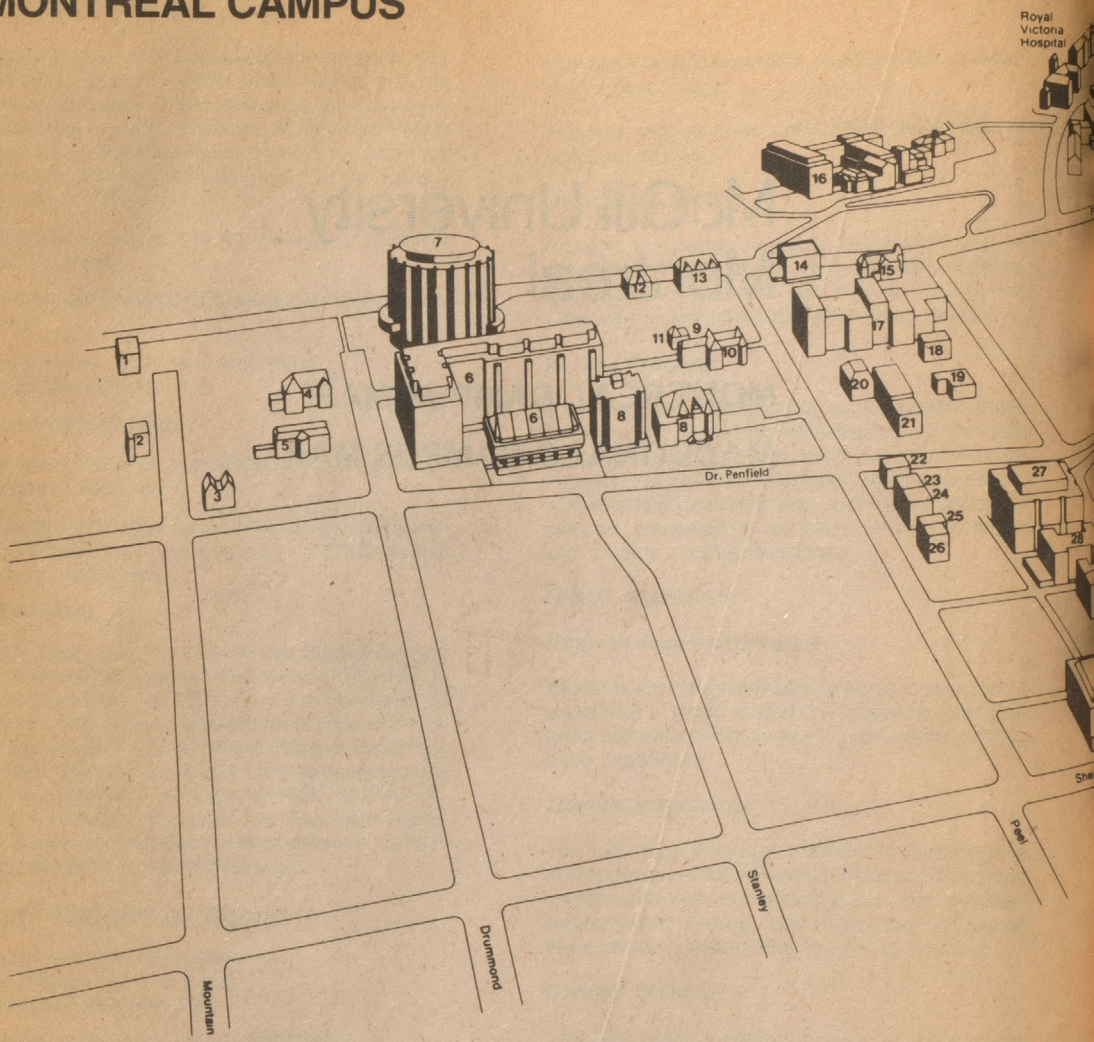
The Conservatory offers practical and theoretical instruction and examinations at the pre-university level. For information, please write to the McGill Conservatory of Music, 555 Sherbrooke Street West, Montreal, PQ H3A 1E3.

McGill University
Montreal

MONTREAL CAMPUS MAP

MACDONALD CAMPUS MAP

MONTREAL CAMPUS



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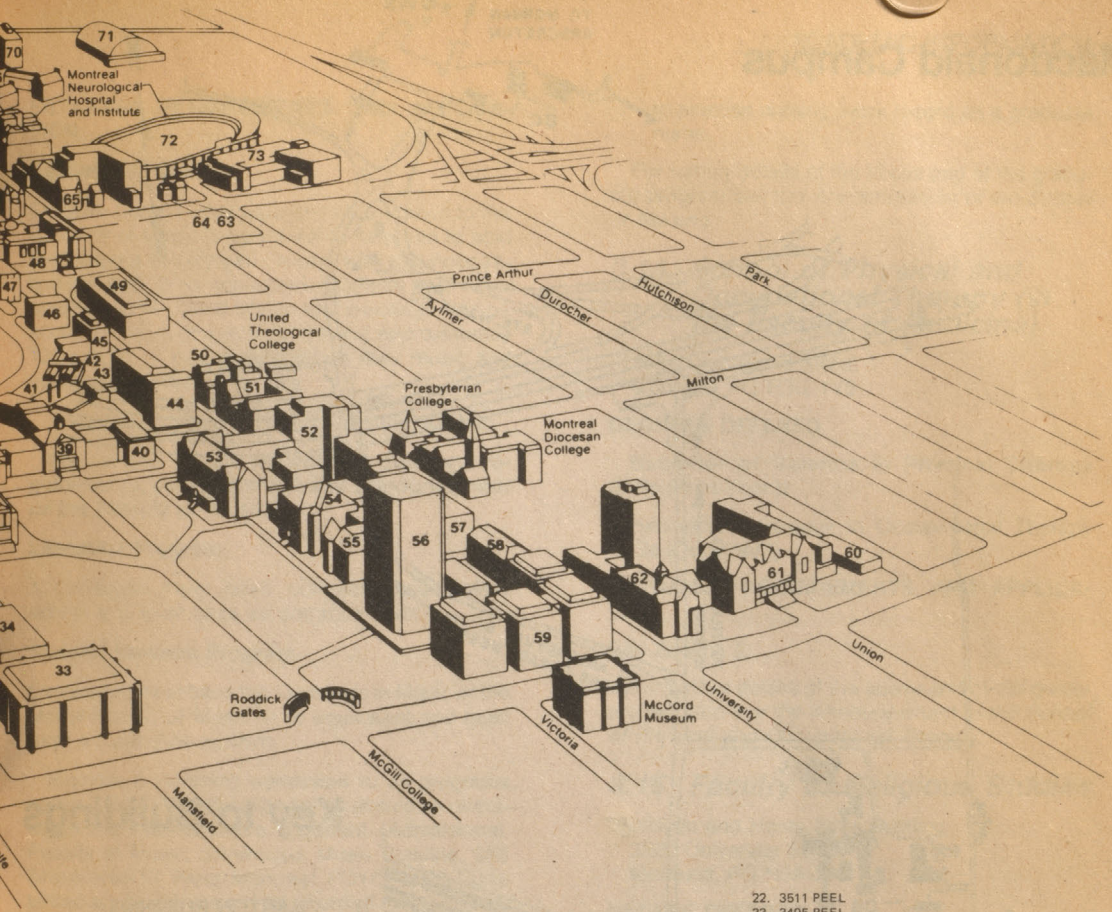

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University Buildings Numerical Key

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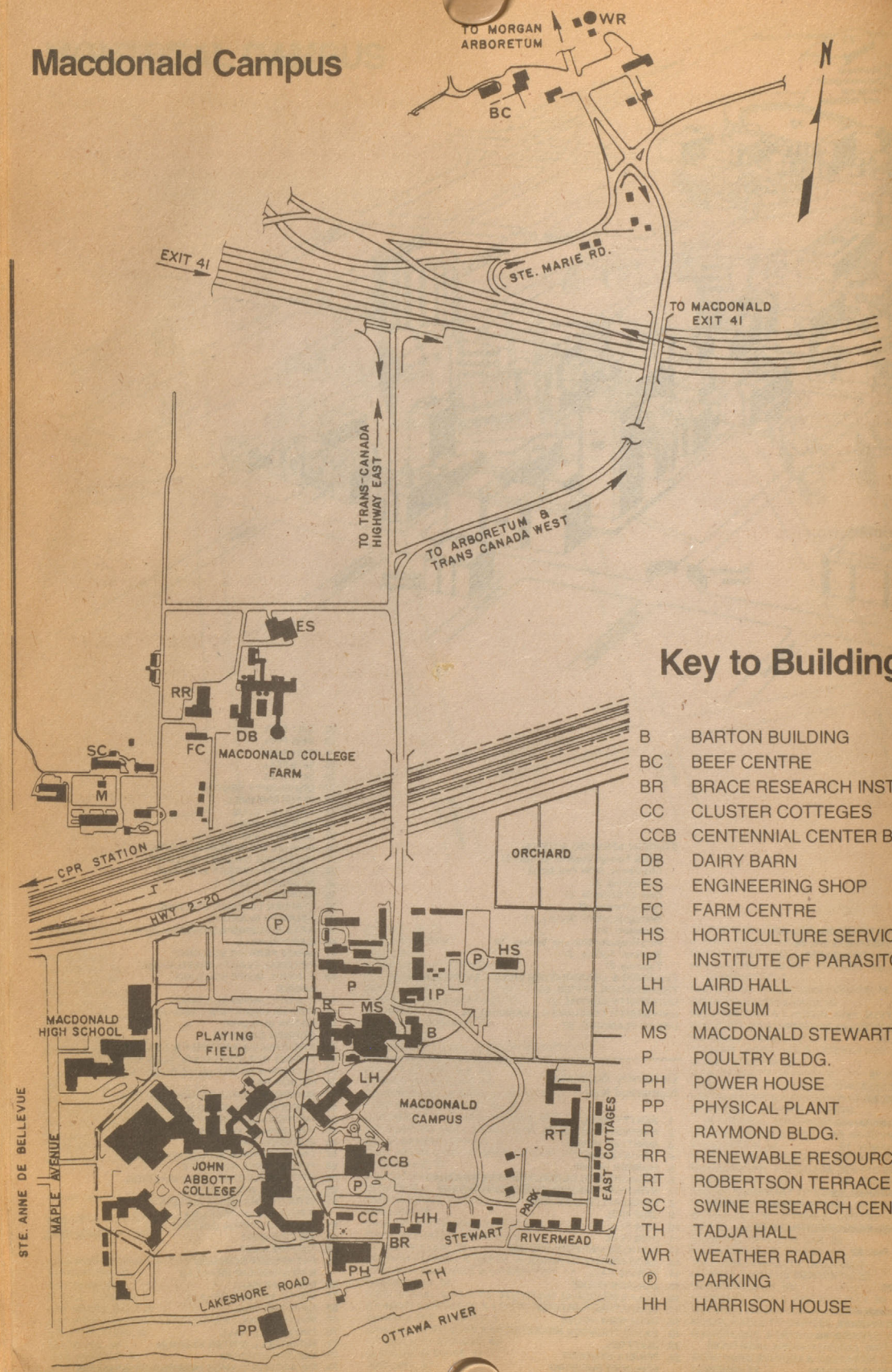
6. STEWART BIOLOGICAL SCIENCES BUILDING
7. McINTYRE MEDICAL SCIENCES BUILDING
8. CHANCELLOR DAY HALL
9. 3690 PEEL
10. 3674 PEEL
11. 3708 PEEL
12. CHARLES MEREDITH HOUSE
13. LADY MEREDITH HOUSE
14. PURVIS HALL
15. DUGGAN HOUSE
16. ALLAN MEMORIAL INSTITUTE
17. EDUCATION BUILDING
18. HUGESSEN HOUSE
19. DAVID THOMSON HOUSE
20. 3647 PEEL
21. POWELL STUDENT SERVICES BUILDING
22. 3511 PEEL
23. 3495 PEEL
24. 3491 PEEL
25. 3479 PEEL
26. 3475 PEEL
27. UNIVERSITY CENTRE
28. PETERSON HALL
29. FACULTY CLUB
30. 3438 McTAVISH
31. 3434 McTAVISH
32. SAMUEL BRONFMAN BUILDING
33. McLENNAN LIBRARY BUILDING
34. REDPATH LIBRARY BUILDING
35. REDPATH HALL
36. MORRICE HALL
37. STEPHEN LEACOCK BUILDING
38. REDPATH MUSEUM
39. ARTS BUILDING & MOYSE HALL
40. DAWSON HALL
41. JAMES FERRIER BUILDING
42. PHYSICAL PLANT–GREENHOUSE
43. F. CYRIL JAMES BUILDING–ANNEX
44. F. CYRIL JAMES BUILDING
45. FOSTER RADIATION LABORATORY
46. EATON BUILDING
47. DONNER BUILDING
48. STRATHCONA ANATOMY & DENTISTRY BUILDING
49. ERNEST RUTHERFORD PHYSICS BUILDING
50. WILLIAM & HENRY BIRKS BUILDING
51. WILSON HALL
52. McCONNELL ENGINEERING BUILDING
53. MACDONALD ENGINEERING BUILDING
54. MACDONALD-HARRINGTON BUILDING
55. MACDONALD PHYSICS BUILDING
56. BURNSIDE HALL
57. FRANK DAWSON ADAMS BUILDING
58. PULP & PAPER INSTITUTE
59. OTTO MAASS CHEMISTRY BUILDING
60. GARFIELD WESTON POOL
61. STRATHCONA MUSIC BUILDING & POLLACK CONCERT HALL
62. ROYAL VICTORIA COLLEGE
63. 505 PINE WEST
64. 509 PINE WEST
65. PATHOLOGY BUILDING & MEAKINS-CHRISTIE LAB
66. DOUGLAS HALL
67. BISHOP MOUNTAIN HALL
68. GARDNER HALL
69. MOLSON HALL
70. McCONNELL HALL
71. McCONNELL WINTER STADIUM
72. MOLSON STADIUM
73. SIR ARTHUR CURRIE MEMORIAL GYMNASIUM

Macdonald Campus



Key to Buildings

B	BARTON BUILDING
BC	BEEF CENTRE
BR	BRACE RESEARCH INSTITUTE
CC	CLUSTER COTTEGES
CCB	CENTENNIAL CENTER BLDG.
DB	DAIRY BARN
ES	ENGINEERING SHOP
FC	FARM CENTRE
HS	HORTICULTURE SERVICES
IP	INSTITUTE OF PARASITOLOGY
LH	LAIRD HALL
M	MUSEUM
MS	MACDONALD STEWART BLDG.
P	POULTRY BLDG.
PH	POWER HOUSE
PP	PHYSICAL PLANT
R	RAYMOND BLDG.
RR	RENEWABLE RESOURCES
RT	ROBERTSON TERRACE
SC	SWINE RESEARCH CENTRE
TH	TADJA HALL
WR	WEATHER RADAR
Ⓟ	PARKING
HH	HARRISON HOUSE

ENTRANCE REQUIREMENTS AND APPLICATION

Bachelor of Music

Students from Québec applying for entrance to the Bachelor of Music program will be required to hold the Diploma of Collegial Studies with a concentration in music, or its equivalent. Students from other provinces, the United States and overseas may be accepted into a program comprising approximately 120 credits or less depending on their music and academic qualifications.

All applicants must pass an entrance audition.

For further details concerning entrance requirements, please consult the *Announcement of the Faculty of Music.*

Licentiate Program

A candidate must have completed secondary school and must pass an entrance audition.

Concert Diploma Program

Candidates must have the Licentiate in Music of the McGill Faculty of Music or its equivalent and must pass an entrance audition.

Inquiries concerning admission to all programs and requests for application forms should be directed to the Administrative Assistant (Admissions), Faculty of Music, Strathcona Music Building, 555 Sherbrooke St. West, Montreal, PQ H3A 1E3. Completed applications *must be returned to the Faculty of Music* by March 1. Late applications will be considered if places are still available.

GRADUATE PROGRAMS

Please see *Section "C" Humanities*, of the *Faculty of Graduate Studies and Research Announcement.*

3.13 School of Nursing (in the Faculty of Medicine)

Wilson Hall
3506 University St.
Montreal, PQ H3A 2A7

DEGREE OFFERED

Bachelor of Science in Nursing (B.Sc.(N.)).

ENTRANCE REQUIREMENTS AND APPLICATION

See Section 2 except for the following:

a) For those with a Diploma of Collegial Studies (Nursing) or its equivalent from a college or institution outside Québec, the following are prerequisite for entrance: licence to practise nursing; work record as a graduate nurse.
b) For those with a hospital school diploma, the following are prerequisite for entrance; CEGEP courses – Biology 301, 401 (preferred); licence to practise nursing; work record as a graduate nurse.

For further details of the above and of the graduate program see the *Announcement of the School of Nursing.*

3.14 School of Physical and Occupational Therapy (in the Faculty of Medicine)

3654 Drummond Street
Montreal, PQ H3G 1Y5

DEGREES OFFERED

Bachelor of Science in Physical Therapy (B.Sc.(Phys.Ther.))

Bachelor of Science in Occupational Therapy (B.Sc.(Occ.Ther.))

ENTRANCE REQUIREMENTS AND APPLICATION

See Section 2.

For further details of the above and of the graduate program see the *Announcement of the School of Physical and Occupational Therapy.*

3.15 Faculty of Religious Studies

William and Henry Birks Building
3520 University Street
Montreal, PQ H3A 2A7

DEGREE OFFERED

Bachelor of Theology (B.Th.)

ENTRANCE REQUIREMENTS AND APPLICATION

Québec students require a Diploma of Collegial Studies. Students from elsewhere should consult the Faculty for admission requirements.

Application forms are available from the Faculty office.

For further information on the undergraduate and graduate programs see the *Announcement of the Faculty of Religious Studies.*

3.16 Faculty of Science

Dawson Hall
853 Sherbrooke St. West
Montreal, PQ H3A 2T6

DEGREE OFFERED

Bachelor of Science (B.Sc.)

PROGRAMS

Three types of study plan are available: Faculty Programs, Major Programs and Honours Programs.

A Faculty Program is an approved coherent selection of courses giving the student a useful con-

centration in a recognized area. Three fifths of the student's course load in a Faculty Program is specified, the remaining courses being freely elected from those offered in the Faculties of Science and Arts.

Major programs are more specialized than Faculty programs and are usually centred around a specific discipline or department. Between three and four fifths of the course load is specified in the program and the student is free to elect the remaining courses from among the offerings in the Faculties of Science and Arts.

Honours Programs require the student to maintain academic performance at a high standard in addition to involving a very high degree of specialization.

A number of Minor programs, designed to accompany or support the above, are also available.

Faculty Programs are available in:

Anatomical Sciences
Biochemistry
Biogeography
Biology
Chemistry
Chemistry, Bioanalytical or Geoanalytical
Chemistry and Biological Sciences
Chemistry, Inorganic/Analytical
Chemistry, Radioanalytical
Climatology
Dynamics of the Oceans and Atmosphere
Earth Physics
Geomorphology
Hydrology
Marine Geology
Mathematics and Biology
Mathematics and Chemistry
Mathematics, Chemistry and Physics
Mathematics and Computer Science
Mathematics and Physics
Mathematics and Psychology
Microbiology and Immunology
Paleobiology
Physics
Physiology
Psychology
Quaternary Studies

Major Programs are available in:

Anatomical Sciences
Biochemistry
Biology
Chemistry
Crystallography
Geography
Geological Sciences
Mathematics
Meteorology
Microbiology and Immunology
Physics
Physiology and Physics
Psychology
Solid Earth Geophysics

Honours Programs are available in:

Anatomical Sciences
Biochemistry
Biology
Chemistry
Computer Science
Crystallography
Geography
Geological Sciences
Mathematics
Meteorology
Microbiology and Immunology
Physics
Physiology
Psychology
Solid Earth Geophysics

Interdepartmental Honours Program in Immunology:

This program is offered in conjunction with the Departments of Biochemistry, Microbiology and Immunology, and Physiology.

Minor Programs

A minor in Computer Science is available in combination with any of the above programs with the exception of the Faculty Program in Mathematics and Computer Science.

A Minor in Electrical Engineering is available for Physics Major students.

A Minor in Environmental Studies is available in combination with any of the above programs.

Diploma in Meteorology

This one-year program is available to holders of a degree in Mathematics and/or Physics who wish to qualify for a professional career in Meteorology.

ENTRANCE REQUIREMENTS AND APPLICATION

See Section 2.

3.17 School of Social Work (in the Faculty of Graduate Studies and Research)

Wilson Hall
3506 University Street
Montreal, PQ H3A 2A7

DEGREES AND DIPLOMA OFFERED

In the Faculty of Arts:
Bachelor of Social Work (B.S.W.)

In the Faculty of Graduate Studies and Research:
Master of Social Work (M.S.W.)
Diploma in Advanced Social Work Practice
Doctor of Philosophy (Ph.D.)

PROGRAMS

B.S.W.

Students are admitted to the three-year program in the Faculty of Arts on a competitive basis after completion of a Diploma of Collegial Studies or equivalent. Students with a Bachelor's degree with strong preparation in social and behavioural sciences may be admitted to a special B.S.W. program consisting of two summers plus a full academic year.

ENTRANCE REQUIREMENTS AND APPLICATION

See Section 2.

M.S.W.

Students are admitted to a 45 credit M.S.W. program, taken over three semesters, upon comple-

tion of the B.S.W. with good standing. Practice experience is desirable.

Diploma in Advanced Social Work Practice

This program is available to persons who hold a M.S.W. degree with high standing, and three years' experience in practice.

For details see the *Announcement of the School of Social Work*.

DOCTORAL STUDIES

In accordance with existing regulations of the Faculty of Graduate Studies and Research, a limited number of special candidates may be accepted for advanced studies leading to a Ph.D. For further information, write to the Director of the School of Social Work.

3.18 Summer Session

Summer Session Office
F. Cyril James Building
845 Sherbrooke St. West
Montreal, PQ H3A 2T5
(514) 392-6740

Summer Session offers a range of undergraduate courses in the Faculties of Agriculture, Arts, Education, Engineering, Management, Music, Religious Studies and Science, and graduate courses predominantly in the Faculty of Education.

Summer Session registration begins in mid-March. Students may register on a first come, first served basis up to the first day of a course.

Registration in the Summer Session does not guarantee admission to McGill. Students wishing to apply to McGill for admission must contact the Admissions Office.

Full information concerning course offerings, specific dates, registration procedures, etc., may be obtained from the Summer Session Office.

Please note that the French Summer School and the Centre for Continuing Education offer summer courses which are not administered by the Summer Session Office. Individuals interested in these courses, briefly listed below, should contact the respective offices concerned.

3.19 French Summer School

The French Summer School, a residential school with an entirely French-speaking staff, was established in 1904. Courses are offered at two levels (undergraduate and graduate) in three divisions: undergraduate, graduate and M.A.

The programs are designed for:

1) Undergraduates who have completed one year of French (Division B).
2) Those having obtained a B.A. degree or its equivalent with sufficent background in the French Language and who wish to take courses at the graduate level especially in Language and Civilization (Division C).
3) Graduates who are presently working towards an M.A. or a Ph.D. at universities other than McGill (Division C).
4) Teachers of French, at the Elementary or Secondary School, College or University level, who desire an effective "refresher" (Division B or C).
5) Graduates who wish to work towards an M.A. (with or without thesis) at McGill University by attending sessions at the French Summer School (Division D).
6) Graduates who wish to work towards the M.Ed. (Teaching French as a Second Language) at McGill University, and who are taking the program organized jointly by the French Summer School and the Faculty of Education (Division D).

The courses carry credits towards McGill degrees; these credits are also transferable to other North American universities and colleges.

Extracurricular cultural and social activities play a major role. These activities are supplemented by the rich and varied resources of French-speaking Montreal. Some members of the teaching staff live in the same residence as the students and mingle freely with them. The exclusive use of French at all times, in and out of class, is compulsory.

For complete information concerning applications, admission requirements and detailed booklet, please write to:

The Director
French Summer School
McGill University
Peterson Hall
3460 McTavish St.
Montreal, PQ H3A 1X9
(514) 392-4678/4679

3.20 Centre for Continuing Education

Strathcona Hall
772 Sherbrooke St. WEst
Montreal, PQ H3A 1G1
(514) 392-5244

In addition to regular undergraduate and graduate programs, the Centre for Continuing Education, in cooperation with the faculties, offers degree, diploma and certificate programs in conjunction with external associations. Following is a brief listing of the various departments and their offerings:

CHARTERED ACCOUNTANCY DEPARTMENT

Graduate Diploma in Public Accountancy

LANGUAGES DEPARTMENT

Certificates of Proficiency in English, French, German, Italian, Russian, Spanish. Certificate of

Proficiency in Translation of English into French – French into English.

Diploma in Translation of English into French – French into English.

Non-certificate courses in Arabic, Chinese, Comparative Stylistics of English and French, Modern Greek, Hungarian, Japanese, Polish, Portuguese, French for Professionals, Yiddish.

LIBERAL ARTS DEPARTMENT

Archaeology
Canadian Studies
Classics
Environmental Studies
Fine and Applied Arts
Human Behaviour
Library Science (for Librarians & Archivists)
Political Science
Religious Studies
Short Term Courses (to be announced)
Occupational Preparation

MANAGEMENT GRADUATE DEPARTMENT

M.B.A. 1
Diploma in Management
Diploma in Management (Tourism)

EDUCATION DEPARTMENT

Bachelor of Education for Certified Teachers (Elementary Education)
Bachelor of Education (Vocational Education)
Diploma in College Teaching
Diploma in Educational Administration
Diploma in Human Relations and Family Life Education
Diploma in Psychology and Education of the Gifted
Certificate in Diagnostic and Remedial Mathematics
Certificate in Educational Media
Certificate in Moral and Religious Education
Certificate in Native and Northern Education
Certificate in Reading Instruction
Certificate in Second Language Teaching
Certificate in Social Studies Education
Certificate in Special Education
Program for Kindergarten Specialists
Teacher Certification Program

ENGINEERING DEPARTMENT

Certificate in Computer Programming
Master's Degree in Engineering – Power Systems Option
General Engineering courses

MANAGEMENT CERTIFICATE DEPARTMENT

McGill Certificates in Accounting, Banking Administration, Business Communications, Health and Social Services Management, Insurance Brokerage, Management, Management Information Systems, Marketing, Real Estate Analysis, Real Estate Appraisal, Transportation.

Bachelor of Commerce for part-time students.

Preparational courses and programs for the following:
Administrative Management Society (CAM)
Appraisal Institute of Canada (CRA) and (AACI)
Association of Human Resource Professionals of the Province of Québec
Association for Systems Management
Association of Professional Placement Agencies and Consultants
Canadian Association of Physical Distribution Management
Canadian Credit Institute (MCI)
Canadian Institute of Management (CIM) and (P.MGR.)
Canadian Institute of Traffic and Transportation (CITT)
Canadian Public Relations Society (Québec)
La Corporation Professionnelle des Comptables Généraux Licenciés du Québec (CGA)
La Corporation Professionnelle des Administrateurs Agréés du Québec (C.Adm.)
La Corporation Professionnelle des Evaluateurs Agréés du Québec (C.App.)
La Corporation Professionnelle des Comptables en Administration Industrielle du Québec (R.I.A.)
Institute of Canadian Bankers (FICB)
Institute of Chartered Secretaries and Administrators (ACIS)
Institute of Internal Auditors (CIA)
Insurance Brokers' Association of the Province of Québec (AIB and (CIB)
Insurance Institute of Canada
International Association of Business Communicators
Le Ministère des Affaires municipales du Québec
Project Management Institute (Montreal Chapter)
Québec Association of Travel Agents
Québec Risk and Insurance Management Association
Real Estate Institute of Canada (FRI division)
Real Estate Institute of Canada (IREM division)
Trust Companies Institute of Canada (ATCI) and (MTCI)

PROFESSIONAL DEVELOPMENT DEPARTMENT

The Department, in cooperation with the various professional bodies and McGill faculties, schools and centres concerned with professional education, offers courses and seminars to practising members of professional organizations.

Course announcements are mailed at regular intervals during the year. Persons wishing to be placed on the mailing lists may telephone 392-6702.

4 LIBRARIES, MUSEUMS AND OTHER FACILITIES

4.1 *University Libraries*

The McGill University Library system comprises five areas as follows:

(1) THE HUMANITIES AND SOCIAL SCIENCES AREA LIBRARY

Area Librarian – MISS A. COLE

THE McLENNAN LIBRARY COLLECTION:

a) A RESEARCH COLLECTION which concentrates on the social sciences and humanities as well as other subjects which include monographs, journals, documents, microfilms.

b) A REFERENCE COLLECTION of encyclopaedias, dictionaries, bibliographical aids, indexing and abstracting services, etc.

c) A CURRENT PERIODICALS READING ROOM which houses approximately 3,100 titles.

d) A GOVERNMENT DOCUMENTS COLLECTION AND READING AREA.

e) A RARE BOOKS AND SPECIAL COLLECTIONS DEPARTMENT.

THE BLACKADER-LAUTERMAN LIBRARY OF ARCHITECTURE AND FINE ARTS houses approximately 65,000 items, numerous periodicals and architectural drawings.

THE EDUCATION LIBRARY contains approximately 112,000 items together with a curriculum laboratory holding tapes, films and other teaching aids plus a collection of children's books. There is also a Physical Education Reading Room in the Currie Gymnasium.

THE ISLAMIC STUDIES LIBRARY contains approximately 74,000 items and a good collection of journals dealing with many aspects of the Muslim world, past and present, with particular emphasis on the humanities. About one half of the works are in English and other western languages, and there is a good collection in Arabic, Persian, Turkish, Indonesian, and Urdu.

THE LIBRARY SCIENCE LIBRARY contains over 95,000 volumes of books and journals in the fields of publishing and library science.

THE MARVIN DUCHOW MUSIC LIBRARY contains some 43,000 items, including reference books and periodicals, scores, tapes and records with listening facilities for records and tapes.

THE RELIGIOUS STUDIES LIBRARY contains 74,000 items in the fields of theology, philosophy, church history, and related subjects.

THE HOWARD ROSS LIBRARY OF MANAGEMENT contains more than 222,000 items in the fields of management, economics, industrial relations and business.

THE SOCIAL WORK LIBRARY contains nearly 39,000 items in the fields of social work, community organization, social sciences, and psychology. While the collection is mainly for the use of students of the School other students may read in the library.

(2) THE LAW AREA LIBRARY

Area Librarian – MICHAEL RENSHAWE

THE LAW LIBRARY contains over 227,000 items, including virtually all Canadian works, and the principal law reports of the United Kingdom, France and the United States, as well as a selection of reports from elsewhere.

(3) THE LIFE SCIENCES AREA LIBRARY

Area Librarian – MRS. F. GROEN

THE BLACKER-WOOD LIBRARY OF ZOOLOGY AND ORNITHOLOGY. This is an internationally known collection of some 74,000 items.

THE BOTANY AND GENETICS LIBRARY serves some of the needs of the Biology and Psychology Departments. It contains more than 19,500 books, periodicals, government publications and pamphlets.

THE DENTISTRY LIBRARY provides 12,500 books and periodicals for faculty and student use.

THE MACDONALD CAMPUS LIBRARY at Ste. Anne de Bellevue contains almost 232,000 items in the fields of agricultural and environmental sciences including food science.

THE MEDICAL LIBRARY contains over 186,000 items and receives approximately 1,700 current journals. This library is noted for its collection in the field of ophthalmology and its retrospective collection of European medical publications.

THE NURSING LIBRARY contains approximately 10,800 volumes and 200 periodical titles. Although the emphasis is on nursing literature, the collection reflects the entire curriculum, including economics, education and the social sciences.

THE OSLER LIBRARY OF THE HISTORY OF MEDICINE contains a collection of about 35,000 items in the history of medicine and allied sciences, and has, as a nucleus, the 8,000 volumes bequeathed to McGill by one of its most famous pupils and teachers, Sir William Osler. This portion is rich in 15th, 16th, 17th, and 18th century medical books. The Library is constantly adding to the collection, especially new books on the history of all aspects of medicine and medical people.

(4) THE PHYSICAL SCIENCES AND ENGINEERING AREA LIBRARY

Area Librarian – R. FREESE

THE MAP AND AIR PHOTO LIBRARY in Burnside Hall has 131,000 maps (worldwide coverage) and 28,000 air photos. Areas of special concentration include the Montreal region, Québec and the Caribbean.

THE MATHEMATICS LIBRARY in Burnside Hall has a collection of approximately 7,700 items, mostly journals.

THE METEOROLOGY LIBRARY in Burnside Hall has over 2,600 books and periodicals on meteorology plus a large number of reports and government documents.

THE NORTHERN STUDIES LIBRARY in Purvis Hall has a collection of about 12,000 items on all aspects of the North, with emphasis on northern Québec, Labrador and Baffin Island.

THE OCEANOGRAPHY LIBRARY in the Eaton Building has 3,100 books and periodicals on biological, chemical, geological and physical oceanography plus an extensive collection of reports and government documents.

THE PHYSICAL SCIENCES AND ENGINEERING LIBRARY of over 213,000 items contains an extensive collection of books, reference material and periodicals in the fields of civil, electrical, mechanical engineering, computer science, chemistry, geology, metallurgy, mining, physics and mathematics.

THE RUTHERFORD PHYSICS LIBRARY contains 2,500 books and periodicals on nuclear, high energy and solid state physics.

(5) THE UNDERGRADUATE AREA LIBRARY

Area Librarian – DR. H. MOLLER

THE UNDERGRADUATE LIBRARY. This is an open access circulating collection of approximately 134,000 items and is located in the Redpath Library building. Services include Reference, Reserves, Circulation and a Periodicals Reading Room. The audio-visual room and drop-in centre are located on the second floor. The Audio-Visual Room is furnished with 225 carrels equipped with audio-visual devices such as slide projector, tape recorder, filmstrip and super-8-loop projectors and television screens.

4.2 University Archives

The McGill University Archives preserves and makes available to researchers of all disciplines more than 5,000 feet of records of permanent value generated over the past 150 years by members of the McGill University community in the course of their activities. In addition to the administrative records raised by the University, it holds the papers of many individuals and organizations affiliated with the University as well as records of businesses, churches and private organizations in the Montreal area. While access to some series of administrative records is restricted, nearly all records of historical interest may be consulted.

4.3 University Museums

THE PETER REDPATH MUSEUM

Built in 1882, this was the first specially designed museum building in Canada. Its extensive collections, begun in the 1850's by its founder, Sir William Dawson, have been augmented over the years by gifts and bequests and are constantly expanding through curatorial field research. They are used for basic reference in graduate and undergraduate teaching.

The Museum's holdings, which now include over a million scientific specimens, are especially rich in invertebrate palaeontology, specific areas of vertebrate palaeontology, palaeobotany, malacology, ornithology and ethnology. Particularly notable are the Carpenter Collection of Mollusca, the Dawson Collections of Palaeontology, the Ferrier Collection of Minerals, and the African ethnological collection.

Director – PROFESSOR J.B. LEWIS

THE McCORD MUSEUM

This museum, with one of the leading collections of Canadiana in the country, stems from the bequest of David Ross McCord in 1919. Notable accessions, including the Notman Photographic Archives, have been added over the years illustrating the history of Canada in general and Québec and Montreal in particular. A regular program of temporary exhibitions is scheduled throughout the year. The Museum, at 690 Sherbrooke Street West, is open to the public from Wednesday through Sunday, 11 a.m. to 5 p.m. Research is by appointment only, from Monday through Friday. For information: 392-4778.

Registrar – CONRAD GRAHAM

THE LYMAN ENTOMOLOGICAL MUSEUM AND RESEARCH LABORATORY

Located on the Macdonald campus, this institution has the largest insect collection of any Canadian university, and is second in both numbers of species and specimens only to the Canadian National Collection of Insects, Ottawa. As its main function is research and teaching, and not exhibition, it is not generally open to the public, but interested parties are encouraged to visit by appointment.

Director – PROFESSOR D.K. McE. KEVAN

THE McGILL UNIVERSITY HERBARIUM

Established in 1856, the McGill Herbarium was combined with the Macdonald Herbarium in 1972 to establish the 120,000 specimen McGill University Herbarium which is situated on the Macdonald campus. It contains some of the earliest collections made in Canada. The collection is devoted to Québec and eastern Canadian flora but specimens from the Arctic and sub-Arctic of Canada, Greenland, Sweden, Lappland and Siberia are well repre-

sented. Research facilities are available to any student or botanist working on northern plants.

Curators – LUC BROUILLET and MARCIA J. WATERWAY

OTHER COLLECTIONS

In addition to the above there are other collections and exhibits of a specialized nature, ordinarily open only to students but to which access may be gained by application to the department concerned. These include the Anatomical, Medical and Pathological Museums.

Appointments for conducted tours may be made to see the Rutherford Collection of Experimental Physics.

4.4 Other facilities

ENGLISH AND FRENCH LANGUAGE CENTRE

The Centre offers French Language courses of a practical nature, for those who will be required to use the language in future, whether in Québec or elsewhere. It aims to bring students to the point where they can readily "function" in the French language.

Courses are also offered in English as a Second Language, emphasizing those skills required for university studies: understanding lectures, note-taking, reading texts, writing assignments.

Director – PROFESSOR BARBARA E. SHEPPARD

CENTRE FOR TEACHING AND LEARNING SERVICES

The Centre is mandated to aid professors in the improvement of learning and teaching at the University. It offers services to faculty in evaluation, course planning, and teaching improvement. Other activities include workshops, general consultation and research on learning and teaching.

Director – PROFESSOR G.L. GEIS

5 RESEARCH INSTITUTES, CENTRES AND LABORATORIES

The institutes and similar groups listed below carry out research and teaching in a number of specialized fields. In most of them facilities are available for qualified students who wish to take higher degrees.

INSTITUTE AND CENTRE OF AIR AND SPACE LAW

The Institute provides for advanced study and research in air and space law and related problems of international law. Research facilities are available in the Centre for Research, created in 1975.

Director – DR. NICOLAS M. MATTE

ALLAN MEMORIAL INSTITUTE OF PSYCHIATRY
1025 Pine Ave., West
Montreal, PQ H3A 1A1

The Allan Memorial is a psychiatric institute for teaching, research, and treatment. McGill University undertakes responsibility for the training and teaching facilities, and the Royal Victoria Hospital for the clinical work. Research facilities are provided for clinical and laboratory studies of clinical conditions and biochemical, physiological and psychological study of various aspects of behavioural disorders in animal and man.

Director – PROFESSOR B.M. ROBERTSON

ANESTHESIA RESEARCH DEPARTMENT

This Department is concerned with electrophysiological and neurochemical studies on synaptic transmission in the brain: the aim is to identify the naturally occurring chemical transmitter and receptor substances and to analyse their modes of action and how these are influenced by general anaesthetics and other drugs acting on the central nervous system.

Director – PROFESSOR K. KRNJEVIC

ANTHROPOLOGY OF DEVELOPMENT PROGRAM

The program coordinates and furthers research and teaching on the process of socio-economic development as it affects small communities in the Canadian north and in low-income countries.

Director – PROFESSOR R.F. SALISBURY

ARTIFICIAL CELLS AND ORGANS RESEARCH CENTRE

This centre concentrates on interdisciplinary research using physiology, biophysics, biochemistry, enzyme engineering, biomedical engineering, clinical medicine, chemistry and polymer chemistry towards novel approaches in clinically useful physiological support systems and other systems for research and their applications. The present research emphasis is on artificial cells, artificial kidney, artificial liver, detoxifier, enzyme replacement therapy, enzyme immobilization, biotechnology, enzyme engineering and biomaterials.

Director – PROFESSOR T.M.S. CHANG

AVIATION MEDICAL RESEARCH UNIT

The Unit deals with the physiology of spatial orientation, vision and postural control.

Director – PROFESSOR G. MELVILL JONES

BELLAIRS RESEARCH INSTITUTE
St. James, Barbados

This is a multidisciplinary institute offering research opportunities in terrestrial and marine biology,

geology, geography, climatology, and chemical and physical oceanography for researchers with academic interests in the tropical environment of Barbados.

Director – PROFESSOR FINN SANDER

BIOMEDICAL ENGINEERING UNIT

The Unit is involved in research, teaching and consultation in the applications of engineering methods and computer technology in medicine and biology. Current research is concerned with neuromuscular control, auditory and vestibular systems, neural communication, signal analysis, respiratory muscle fatigue, respiratory gas transport mechanisms, medical database systems and computer applications in medical research. The Unit operates a DEC PDP-11/70 computer system which provides real-time computing facilities for medical research users and serves as host for a developing network of laboratory minicomputers.

Director – PROFESSOR J.S. OUTERBRIDGE

BRACE RESEARCH INSTITUTE

The Institute is concerned with the research, development and utilization of renewable energy technology with particular reference to developing and arid areas of the world.

Director – T.A. LAWAND

INSTITUTE AND CENTRE OF COMPARATIVE LAW

The Institute and Centre of Comparative Law is devoted to graduate study and research in comparative public and private law, principally in civil and commercial law. Special attention is paid to comparative private law and international business law and related fields.

Director – PROFESSOR PAUL-A. CRÉPEAU, O.C., Q.C.

CENTRE FOR CONTINUING MEDICAL EDUCATION
1110 Pine Ave. West
Montreal, PQ H3A 1A3

The purpose of the Centre is to promote, coordinate and organize programs in continuing medical education for the various departments and schools of the Faculty of Medicine and the McGill teaching hospitals.

Director – DR. GUY E. JORON

DAIRY HERD ANALYSIS SERVICE
(Livestock Population Genetics)
Macdonald Campus

The Service undertakes research in the dynamics of domesticated livestock populations with particular emphasis on the physiological and environmental factors that affect the estimation of the relative genetic merit of individual and groups of animals.

Director – PROFESSOR J.E. MOXLEY

CENTRE FOR DEVELOPING AREA STUDIES

The Centre stimulates research and promotes seminars and lectures on development topics mainly in the social sciences as well as maintaining an active publication program and involvement in the larger development community.

Director – PROFESSOR T.C. BRUNEAU

CENTRE FOR EAST ASIAN STUDIES

The Centre coordinates teaching and research activities in East Asian Studies and administers honours and major programs under the direction of the East Asian Advisory Committee.

Director – PROFESSOR M. LOCK

FOSTER RADIATION LABORATORY

The Laboratory houses the experimental nuclear physics activities at McGill. Its research program is centred around a recently upgraded synchrocyclotron which can accelerate proton, deuteron, helium-3 and alpha particles up to l00 MeV, 50 MeV, 135 MeV and 100 MeV, respectively. Current research activities are focused on the study of the unstable nuclei lying far from the beta stability line. Properties of level structure, high spin states, beta decay, electromagnetic transitions, delayed proton and alpha decays are investigated using very high speed pneumatic target transport systems, recoil gas jet systems, an on-line isotope separator and a super-conducting beta ray spectrometer. The Laboratory is also equipped with excellent facilities for conventional beta and gamma spectroscopy studies and subnanosecond lifetime measurements. There are two fully equipped in-house computers, a PDP-11/34 and a PDP-15 for data acquisition and control. In addition, the Laboratory also participates in research activities of environmental, archaeological and medical physics interests.

Director – PROFESSOR J.K.P. LEE

FRENCH CANADA STUDIES CENTRE

The Centre is engaged in the study of French Canada at the undergraduate and graduate levels.

It is an interdisciplinary teaching and research unit that includes Québec society as an area focus.

Director – PROFESSOR YVAN LAMONDE

GAULT ESTATE and MONT ST. HILAIRE NATURE CONSERVATION CENTRE
422 rue des Moulins
Mont St. Hilaire, PQ J3G 4S6
(514) 467-4010

The Estate, a legacy from the late Brigadier A. Hamilton Gault, consists of 1100 hectares of forest on Mont St. Hilaire, 35 kilometres east of Montreal, and includes Lac Hertel and its complete drainage basin. The entire property is protected as a federal bird sanctuary.

In 1978, because of its combination of unique ecological features, its protected status under the University, and its public availability as a teaching

resource, Mont St. Hilaire was designated a Biosphere Reserve under the United Nations Education Scientific and Cultural Organization (UNESCO). It is the first such international reserve to be declared in Canada and the 144th in the world.

The 570 hectare western portion known as the Nature Centre Sector, with four summits linked by a 24 kilometre network of trails, is open daily throughout the year to members of the University and the visiting public. No motorized vehicles are permitted beyond the parking area except on official business. Parking fees are charged. No camping is permitted at any time.

The 490 hectares touching the eastern shore of the lake constitute the Research and Preservation Sector, to which access is restricted by permit for approved field research in the natural sciences.

In the forty hectare Development/Access Sector, comfortable dormitory facilities are available for up to 32 persons for classes and for individuals involved in research. Day-Conference facilities are provided at Manoir Gault on Lac Hertel for groups of up to 50 persons.

The Estate is also headquarters for the Mont St. Hilaire Nature Conservation Centre, which conducts a year round bilingual nature interpretation program for all ages.

Director of the Gault Estate and Director of the Nature Centre – MICHEL DREW

GEOTECHNICAL RESEARCH CENTRE

Research interests include fundamental soil mechanics, soil-water interaction, frozen soils, soil freezing and frost heave, thermal soil properties and mechanics, soil dynamics and soil-structure interaction, soil stability and constitutive behaviour, ground water recharge mobility and trafficability, and other related problems in soil engineering.

Director – PROFESSOR RAYMOND N. YONG

CENTRE FOR HUMAN GENETICS

The Centre provides a home base for scientists working on genetical problems related to human beings in McGill University hospitals and research laboratories throughout the city. Its purpose is to coordinate teaching in human genetics, develop teaching and consultative programs in areas where genetics is underrepresented, encourage communication and collaboration between genetics units and promote the progress of genetical research and its application to health care.

Director – DR. LEONARD PINSKY

INDUSTRIAL RELATIONS CENTRE

The Centre provides information through evening seminars, research on industrial relations and general labour relations and public conferences. It publishes newsletters surveying developments in industrial relations in Canada and maintains a computerized analysis of more than 1000 Canadian collective agreements. Membership from the community includes crown corporations and government agencies, industrial firms, hospitals and labour unions.

Director – PROFESSOR FRANCES BAIRSTOW

INSTITUTE OF ISLAMIC STUDIES

McGill University's Institute of Islamic Studies is concerned with the disciplined study of Islamic civilization throughout the scope of its history and geographical spread. The program gives attention to the origins of the tradition, the changes through which it has passed, and the evolution it is currently experiencing. It also considers the contemporary dynamics of the Islamic world as non-Muslims attempt to appreciate it with insight, as Muslims seek to relate their heritage to present conditions of modernity, and both to communicate.

Director – PROFESSOR C.J. ADAMS

MANAGEMENT INSTITUTE

The Management Institute provides a variety of services to managers in business, government and non-profit institutions. It offers courses and seminars designed to help middle and senior management people to develop themselves as effective managers, to keep abreast of current developments in analytical and decision-making techniques, and to acquire a better appreciation of the integrative problems of general management.

Other activities include a variety of seminars and conferences which bring together people at the most senior levels of business and government to discuss, in an informal setting, matters affecting the development of government policy and legislation.

Director – PROFESSOR R.N. MORRISON

McGILL CANCER CENTRE

The Centre was established in January 1978 to integrate all cancer-orientated activities taking place within the hospitals and laboratories of the University.

Director – PROFESSOR ROGER HAND

McGILL-MONTREAL CHILDREN'S HOSPITAL LEARNING CENTRE
3640 de la Montagne
Montreal, PQ H3G 2A8

The Learning Centre has developed a comprehensive program to assess, treat and plan for children with specific learning disabilities. It offers internships and training programs for students in psychology, education and social work. Research into cognitive defects is continuous.

Director – Miss ANNETTE HEBB

McGILL UNIVERSITY PROJECT FOR HEARING-IMPAIRED CHILDREN

This project is concerned with the identification and management of deafness in early infancy. Both basic and clinical research is undertaken. The work includes study of prosthetic devices, evaluation of

training procedures and the development of testing techniques. Both clinical and research aspects of the project are designed to afford practical experience for graduate students of aural rehabilitation and education of hearing-impaired children.
Director – PROFESSOR DANIEL LING

McINTYRE ANIMAL CENTRE

The McIntyre Animal Centre is responsible for the quality of laboratory animal care at McGill University and for ensuring humane practices in compliance with the standards of the Canadian Council on Animal Care for the care and use of experimental animals. It offers comprehensive laboratory animal services to teaching and research programs requiring laboratory animals and related facilities. A training program in laboratory animal science is offered for technicians, students and research staff.
Director – DR. R.H. LATT

MONTREAL NEUROLOGICAL INSTITUTE AND HOSPITAL

The Montreal Neurological Institute and Montreal Neurological Hospital are concerned with undergraduate and graduate teaching in neurology, neurosurgery and the neurosciences, research in basic and clinical sciences related to the nervous system, and clinical care for patients with disorders of the brain and nerves.
Director – PROFESSOR WILLIAM H. FEINDEL

MORGAN ARBORETUM
Macdonald Campus

Established in 1947 and located on the Macdonald Campus, the Arboretum has 600 acres of woodland devoted to the study of woodlot management and the place of private forestry in the eastern Canadian economy; the study of forest values and their conservation; teaching, research, demonstration, and conservation education. About 100 acres have been planted in reforestation projects involving many coniferous and broad-leaved species. In addition, the Arboretum has an excellent collection of specimens of Canadian and foreign trees and shrubs. A Conservation Centre, suitable for meetings, classes, and demonstrations was constructed in 1979.
Curator – PROFESSOR J.D. MacARTHUR

McGILL CENTRE FOR NORTHERN STUDIES AND RESEARCH
1020 Pine Ave. West
Montreal, PQ H3A 1A2

The Centre initiates, encourages and coordinates northern research, education and training. It is strongly committed to the development of interdisciplinary teaching and research. The Centre assists in the interchange of information among those engaged in northern studies and research, maintains records of all related activities in the University, provides information on the University's capacity to undertake northern research, prepares and assists others in the preparation of research proposals and the assembling of teams, and serves as a liaison with other research and teaching organizations, industry and government. It is a member of a cooperative information network, "Information North Québec" which publishes "Nouvelles INQ News".

Laboratory facilities for field work and accommodation are available at the McGill Subarctic Research Station, Schefferville, Québec, and at the Axel Heiberg Station, Axel Heiberg Island, N.W.T.

The Centre encourages students to develop a continuing interest in the north and to follow careers relating to it. It co-ordinates lectures, seminars and academic courses on northern topics.
Director – PROFESSOR J.M. CRAM

INSTITUTE OF OCCUPATIONAL HEALTH AND SAFETY
Charles Meredith House
1130 Pine Ave. West,
Montreal, PQ H3A 1A3

Research and teaching at this Institute is concerned with all aspects of working environments which affect health and safety. This includes studies of dusts, ventilation, noise, chemical hazards and underground illumination.
Director – PROFESSOR J.C. McDONALD

INSTITUTE OF OCEANOGRAPHY

The Institute programs emphasize the interdisciplinary nature of oceanography. Excellent laboratory and library facilities are available for research, and opportunities for field work exist in the Arctic, the estuary of the St. Lawrence and other rivers, the Gulf of St. Lawrence, the Canadian eastern seaboard, and at the Bellairs Research Institute in Barbados. The special research interests of the Institute include the physics of sea ice, the energy exchange between atmosphere and hydrosphere, marine climatology, physical oceanography, marine geology and geochemistry of estuarine and coastal waters, growth and life cycles of marine organisms, marine productivity and marine biogeography.
Chairman – PROFESSOR R.G. INGRAM

INSTITUTE OF PARASITOLOGY
Macdonald Campus

The research Institute is located on the Macdonald campus, but is a part of the Faculty of Science. It trains graduate students in a wide range of subjects from fisheries and wildlife parasitology to paramedical studies in immunology and epidemiology. It also serves as the National Reference Centre for Parasitology for Health and Welfare, Canada, and as the Laboratoire provincial de parasitologie for the Ministère des Affaires Sociales du Gouvernement du Québec.
Director – PROFESSOR E. MEEROVITCH

PHONETICS RESEARCH LABORATORY (Department of Linguistics)

Research is undertaken in acoustic phonetics and speech perception, spectrographic analysis of speech and production of synthesized speech by means of an Electronic Vocal Analog. Languages investigated include English, French, Cree, Eskimo, Czech.

Director – PROFESSOR ANDRÉ RIGAULT

PULP AND PAPER RESEARCH INSTITUTE OF CANADA

The Institute is a separately incorporated non-profit research organization affiliated with McGill University and also with the Canadian Pulp and Paper Association and the federal government but has its own board of directors. Principal fields of research include pulp and paper technology, mechanical and chemical pulping, paper making, process control, product quality and environmental pollution. In cooperation with various departments of McGill University, the Institute conducts a program of post-graduate research on topics of interest to the Canadian pulp and paper industry.

CENTRE FOR THE STUDY OF REGULATED INDUSTRIES

The Centre was established in 1977 to improve understanding of regulated industries in Canada through research and teaching. The industries include those involved in transportation, telecommunications and energy whose major administrative decisions are reviewed by governmental bodies established for that purpose. The Centre is interdisciplinary in nature and, in addition to undergraduate courses, offers a series of graduate courses related to various aspects of regulated industries which will allow students to specialize in this area within the context of existing degree programs.

Director – PROFESSOR CHRISTOPHER GREEN

SOCIAL SCIENCES STATISTICS LABORATORY

The laboratory promotes quantitative research in the social sciences with technical and specialized assistance.

Director – PROFESSOR J.C.R. ROWLEY

McGILL SUBARCTIC RESEARCH STATION
P.O. Box 790,
Schefferville, PQ G0G 2T0
(418) 585-2489

This station at Schefferville in the centre of the Nouveau-Québec/Labrador peninsula provides facilities for year round environmental research, currently specializing in biogeography, ecology, hydrology, microclimatology, pedology, permafrost, ice and snow studies, limnology and geomorphology.

Scientific Director – PROFESSOR T. MOORE

6 ACADEMIC REGULATIONS

6.1 Grading and Credit System

Most faculties (exceptions: Graduate Studies and Research, Law, Medicine, Dentistry) use a credit system to determine student standing. While certain minor variations are described in the faculty announcements, the credit system is as set out here.

In undergraduate faculties a minimum of 90 credits must be accumulated for a degree though some programs such as "Honours" programs may require a higher total.

Graduate students do not have grade averages calculated and must achieve a grade of 65% or better for a course to be counted towards their degree.

Students in Medicine and Dentistry also do not have averages calculated. They are promoted on a year to year basis. The Faculty of Law calculates an honours point average. Further details may be found in the respective faculty announcements.

In faculties using the credit system each course is assigned a credit rating reflecting the amount of effort it demands of the student. This will often represent the number of weekly contact hours the course requires. In general, a three credit course indicates three hours of lectures (which may or may not include laboratory periods, conference, etc.) per week for one term.

Courses are graded either by letter grades or in percentages.

The letter grades and their numerical equivalents are shown in the following table:

Letter Grades	Grade Points	Percentage Range
A	4.0	85-100
A–	3.7	80-84
B+	3.3	75-79
B	3.0	70-74
B–	2.7	65-69
C+	2.3	60-64
C	2.0	55-59
D	1.0	50-54
F(Fail)	0	0-49

The course promotion system is used to evaluate student progress. A grade point average (GPA) is calculated by multiplying the course credit value by the value of the grade points and dividing the sum obtained by the number of credits attempted.

Other letter grades and their impact on averages are explained in the next section.

Some faculties such as Agriculture and Engineering calculate semestrial averages and assess student standing at the end of each semester. In these

cases students will be given or denied permission to pursue their studies at the end of each semester.

A cumulative grade point average will be calculated comprising the student's entire record at McGill in a degree/diploma program.

Grades of C and better are considered satisfactory passes, D a conditional pass and F a failure. Certain courses have been approved for Pass/Fail (P/F) grading. In almost all programs, required or prerequisite courses must be passed with C standing. Grades of D or F continue to be used in the calculation of the CGPA even after a subsequent mark is submitted.

Standing will be determined by the grade point average achieved by the student.

Satisfactory Standing

Students enter the University in satisfactory standing and remain in this standing unless their GPA for any year drops below 2.0.

Probationary Standing

Students whose GPA drops to between 1.5 and 1.99 (in some faculties between 1.2 and 1.99 for the first year) are placed in probationary standing. Students in probationary standing must return to satisfactory standing within one year by obtaining a GPA of 2.5 or CGPA of 2.0 otherwise they will be placed in unsatisfactory standing.

Faculties impose a limit on the number of credits for which students in probationary standing may register. This is usually 12 credits per term.

Unsatisfactory Standing

A GPA of less than 1.5 (in some faculties 1.2 in the first year) places a student in unsatisfactory standing.

Students in unsatisfactory standing must withdraw. They may be readmitted to probationary standing upon appeal to the faculty. Students in unsatisfactory standing for the second time will be required to withdraw permanently.

Cumulative grade point averages in the new program begin again at zero when a student changes degree programs, e.g. B.Eng. to B.Com.

Degree Requirements

Holders of a Québec Diploma of Collegial Studies must complete a total of 90 credits (i.e. have passed courses whose total credit value is 90) to be eligible for a degree, must have passed satisfactorily all courses required by their program, and have a CGPA at McGill of at least 2.0.

Out-of-province students will have the minimum number of credits required for their degree indicated on their acceptance letter. To be eligible for a degree, they must, in addition, pass satisfactorily all courses required by their program, and have a CGPA at McGill of at least 2.0.

Transfer Credits

In certain cases, credit may be granted for courses taken at other universities after a student's initial registration at McGill. Approval of the Dean or the Associate Dean is necessary and should generally be obtained in advance. Advanced standing for previous courses is described in the Admissions section.

Transfer credits are not calculated in the GPA or CGPA and the grades are not entered on the student's McGill transcript of record.

6.2 Definition of Letter Grades

All courses taken at McGill and all results obtained appear on the transcript of record.

The following is an explanation of the letter grades used (not all of these grades are used by every faculty) and of their impact on average calculations:

A → C	Satisfactory Pass (See Credit System, Section 6.1)
D	Conditional Pass
F	Failure
P	Pass
J	Absent (Included as F in averages)
HH	To be continued (Grad. Studies)
K	Incomplete (No average calculated if "K" on record)
KF	Incomplete Failed (included as F in averages)
KK	Completion not required (Not counted in averages)
K*	Incomplete-extension granted (No average calculated
L	Deferred (No average calculated)
L*	Permitted to complete course (No average calculated)
W	Withdraw (Not included in averages)
WF	Withdraw failing (Not included in averages)
WL	Permitted to withdraw from a deferred examination (Not included in averages)
R	Course credit
S	Satisfactory (Medicine only – no averages calculated)
U	Unsatisfactory (Medicine and Music only – included as F in Music averages)
Q	Course continued in next term
&&	Grade not yet available (No averages calculated)
– –	No grade – student withdrew from the University

6.3 Student Categories and Course Loads

The following categories are used by all faculties except,

(1) Medicine and Dentistry, whose students must be full-time;

(2) Graduate Studies and Research, whose categories are listed in that faculty's announcement.

Full-time Students

In most faculties, full-time students in Satisfactory standing take a minimum of 12 credits per term.

Students in Probationary standing take between 10 and 12 credits per term.

Part-time Students

Part-time students carry fewer than 12 credits per term.

Special Students

A special student takes regular credit courses, but is not registered in a degree program. Any person who meets normal requirements for admission to a faculty may apply to the Office of the Dean or Associate Dean for permission to take a course. If the course requested has prerequisites the applicant must show that the prerequisites or equivalent courses have been passed. In the Faculty of Management only a limited number of special students will be admitted. In the Faculty of Science special students must normally hold an undergraduate degree. To qualify for this status in most faculties a student must hold an undergraduate degree and have a specific approved plan of study. Applications must be made at the Office of the Dean or Associate Dean.

Visiting Students

A visiting student is one who is taking courses at McGill for credit at another university. Applications must be made at the Office of the Dean or Associate Dean.

6.4 Course Changes

Students wishing to make changes to the courses for which they are registered (dropping a course, adding a course) must do so through their faculty's Student Affairs office.

6.5 Withdrawal from Course

Withdrawal from a course after the change of course period will be allowed by the Dean or the Associate Dean up to the date specified in the faculty announcement. Students who have not officially withdrawn from courses they are no longer attending will have a failing grade recorded at the end of the session. Fees are refundable under conditions listed in section 7.3.

6.6 Withdrawal from the University

See Section 7.3

6.7 Examinations

Students may write term papers and their answers to examinations in English or French, except in the case of certain language and literature courses.

Final Examinations

Final examinations are held during an examination period following the term in which the course is given. In some courses there is no final examination; standing in these courses is determined on the basis of term work and class tests.

Suppiemental Examinations

There is a supplemental examination period during the month of August. Students may receive permission to write supplemental examinations in courses in which they obtained a D or an F. It should be noted that supplemental examinations are not necessarily available in all courses. It is the students' responsibility to determine this by checking with the instructor and to avail themselves of this privilege at the time of the next supplemental examination period. The supplemental result will not erase the D or F originally obtained which was used in calculating the GPA. Both the original mark and the supplemental result will be calculated in the CGPA (i.e. the taking of a supplemental examination has the same effect on a student's GPA as does repeating the course). Written application to write a supplemental examination must be submitted to the Dean's or Associate Dean's Office. Special permission is required if a student wishes to write supplementals totalling more than 6 credits. A fee of $10 for each supplemental paper is payable to the Cashier as soon as the application has been approved. Students who do not intend to write the supplemental for which they are registered should officially withdraw, otherwise a grade of "J" (Absent) will be recorded ("J" counts as an F in CGPA calculations).

In certain cases, students may be permitted to write one supplemental examination during the April-May examination period in a first term course in which they have obtained a D or an F, if the course is also given in the second term. No attempt is made to avoid conflict between this supplemental and the student's required final examination, and in the case of such a timetable conflict the student will be required to postpone the supplemental to the August period.

Depending on the course, the supplemental result may or may not include the same proportion of class work as did the original grade. The instructor will announce the arrangements to be used for the course early in the term.

Deferred Examinations

A student who, for reasons such as illness or family affliction, has been unable to write one or more examinations, may receive permission to write deferred examinations in their stead which will normally be written in the next supplemental examination

period. The Dean's or Associate Dean's office must be informed within one week of the examination of the reasons for absences. An "L" will appear on the Report of Standing in place of a grade in such courses, and will be replaced by the grade obtained in the deferred examination after it has been written.

Reassessment of a Grade

If students wish marks checked or their examination papers re-read, they must apply in writing to the Office of the Dean or Associate Dean.

Any request to have a term paper reassessed must be made directly to the professor concerned.

Credit by Examination

In certain cases students may apply to write the final examination in order to obtain credit in a course for which they are not registered (this is possible only in those courses where there is no other assessment than the final examination).

Special Facilities

Students with visual or other disabilities should consult the office of the Associate Dean about the possibility of special examination facilities.

6.8 Incomplete Courses

If, in the instructor's opinion, there is sufficient reason to permit a delay in the submission of required term work, an extension of deadline of up to four months after the end of the course may be granted the student. In this case, the instructor will submit a grade of "K" (incomplete). If a new grade is submitted within the deadline by the instructor, this will appear on the student's Faculty reports and verification forms following the K and will replace the K on the student's official transcript.

If the required work is not completed before the deadline the grade of KF will be recorded in the same way as the grade above. (KF denotes a failed course and has the same effect on the GPA as an F).

In exceptional circumstances, and with the approval of the Associate Dean, the four month deadline may be extended further, in which case the grade of "K" will appear.

Students who have not, without accepted excuse, participated or written the final examination in a course for which they are registered may be given a grade of J (absent).

6.9 Academic Credit Transfer Agreement

Regular full-time undergraduate students and regular full-time or part-time graduate students registered at McGill may, with the written permission of the Dean of their Faculty, register for up to six credits in each academic year at any university in the province of Québec. These courses, weighted, graded, and successfully completed according to the standards of the university giving the courses, will be fully recognized by McGill for the purpose of the degree for which the student is registered.

This privilege will not be granted automatically; the courses should form a required part of the student's program and be unavailable at McGill.

Students wishing to take advantage of this agreement should consult their Associate Dean for details, and are informed that this agreement is subject to the following conditions:

i) that the other universities concerned may, at their discretion, refuse the registration of a student for any of its courses;
ii) that the obligation of the student to follow the curriculum laid down by McGill is not affected.
iii) that the student is responsible for ensuring that the McGill timetable permits these courses to be taken without conflict.
iv) that the universities concerned are not responsible for special arrangements in cases of examination timetable conflicts.

Students may take advantage of this agreement by completing the TRANSFER CREDIT form available from the Registrar's Office. This form permits the student to collect the required academic authorizations and that of the Director of Finance; ensures automatic fee transferral from the home university to the host university; and ensures the automatic reporting of marks and credits to the home university.

6.10 Policy Concerning Access To Records

Reports of standing, statements of account and all other correspondence are sent directly to the students who retain full control as to who has access to their records or accounts. No progress report or any other information is sent to parents and/or sponsor unless specifically requested by the student. Transcripts of record, if required, must be requested by the student and are released only with the permission of the student. Students may not receive official transcripts which must go directly to the university or employer concerned. One free copy of the transcript with each new order of transcripts is sent to the student (stamped "For Student Use"). The University will only issue complete transcripts recording all work attempted and results obtained in any and all programs, and partial transcripts will in no circumstances be issued. *See Section 7.1 for fee.*

7 FEES

The University reserves the right to make changes without notice in the published scale of fees.

Fees are not refundable, except under special conditions. See "Regulations Concerning Withdrawal" below.

7.1 University Fees

Tuition fees are based on a per credit charge of $19 per credit. This fee includes all the regular charges of the University for registration, tuition, laboratories and libraries. In addition, Student Services fees of $95 and Students' Societies fees of from $43-$75 are separately assessed for all students taking 24 or more credits and must be paid at the same time as the tuition fees. A normal academic load of 30 credits would be $570 in tuition fees ($19 X 30) plus fees for Student Services and Students' Societies. The faculties of Medicine, Dentistry and Graduate Studies and Research are not presently on the credit system and their tuition fees are listed separately below.

New foreign students are required by the Québec government to pay 60% of the estimated cost of their studies. For 1982-83 this is $4,350 per year or $145 per credit. Returning foreign students will pay $3,500 per year or $116.70 per credit and an additional $1,000 per year in each subsequent year until they reach the rate paid by newly admitted foreign students.[5]

FULL TIME STUDENTS (Degree Candidates)

Credit System Faculties and Schools

$19 per credit plus $95 Student Services, and Students' Societies fees as follows:

	Students' Societies
Agriculture – B.Sc.(Agr.)	$52
B.Sc.(Agr.Eng.)	52
B.Sc.(F.Sc.)	52
Architecture – B.Sc.(Arch.)	48.50
B.Arch.	48.50
Arts – B.A.	43
B.S.W.	44
Education[1]	46
Engineering	51
Law[2]	75
Management	50
Music[3]	43
Nursing – B.Sc.(N.)	55
Physical and Occupational Therapy	51
Religious Studies	50.50
(candidates for ordination are exempted from tuition fees)	
Science	43

Other Undergraduate Faculties and Schools

Dentistry: Tuition fees of $570 or $4,350 for foreign students, ($3,500 for returning foreign students) plus Student Services of $95, Students' Societies fees of $37.50 (including Dental Review) and rental of laboratory and clinical equipment as follows:

1st year	$450
2nd year	610
3rd year	585
4th year	585

Medicine: Tuition fees of $719 or $4,350 for foreign students, ($3,500 for returning foreign students) plus Student Services of $95 and Students' Societies fees of $40.

Graduate Studies:	Tuition *per term*	Student Services *per term*	Students' Societies *per term*
Graduate Diploma	$285	$47.50	$21.75
Qualifying Program	285	47.50	21.75
Master's Full Time	285	47.50	21.75
Master's Additional Sessions	20	47.50[4]	8.85
Doctorate Full Time	285	47.50	21.75
Doctorate Additional Sessions	20	47.50[4]	8.85

The Graduate Studies Announcement should be consulted for information concerning foreign student fees[5], residence requirements in individual programs and tuition fees assessed on a per credit basis.

1 Students in the one year Diploma programs are charged an additional fee of $7.50 per term for Postgraduate Students' Society.

2 Includes $11 for Law Journal, $30 for course materials, and $10.50 for Undergraduate Society.

3 Students electing further courses (one hour per week) in individual practical instruction above the requirements of the program are charged an additional $700 per year or $350 per term.

4 Student Services fees for additional session are optional. Arrangements can be made at the Department of Athletics Office or the Dean of Students Office.

5 Exemption from foreign student fees may be claimed by students in certain categories. A list of these categories and required application forms are available at registration.

PART-TIME, SPECIAL AND VISITING STUDENTS

Undergraduate Students

Where the credit system is applicable $19 per credit or $145 per credit for foreign students will be assessed. Otherwise the charge will be $114 per full course or $870 per full course for foreign students and $57 per half course or $435 per half course for foreign students.

In addition, the following fees will be assessed **per term**:

a) If taking 9 credits and over:
Student Services $47.50
Students' Societies $16.00
(average fee, actual varies by Faculty)

b) If taking 6.5 to 8.5 credits:
Student Services ..... $25.25[I]
Students' Societies ..... $ 7.95

c) If taking 3.5 to 6 credits:
Student Services ..... $15.75[I]
Students' Societies ..... $ 7.95

d) If taking 3 credits or less:
Student Services ..... $ 9.50[I]
Students' Societies ..... $ 7.95

Graduate Students

For information concerning fees for half-time, part-time, special and visiting students see the *Graduate Studies Announcement.*

SPECIAL FEES AND PENALTIES

Application for Admission[II] $15.00
Late Registration[V] 50.00
Late payment fee (after specified date):
1st 30 days 10.00
After 30 days 25.00
Application for Graduation Fee[III] 25.00
Duplicate Student Identity Card 10.00
Duplicate diploma 25.00
Certified transcript of student's record:[IV]
First copy with each order 3.00
Additional copies made at the same time, each 1.00
Re-reading examination paper 10.00
(Music & Science $25 non-refundable, Arts $25 refundable only if increased grades result)
Supplemental examinations, each paper 10.00
Changes in course (Arts, Science, B.Com.) each change after specified change of course period 5.00
Changes in course (Music) each change after specified change of course period 10.00

[I] Excludes use of athletics facilities. An extra payment of $21.25 per term may be made if use of these facilities is desired. This can be arranged at the Department of Athletics Office or the Dean of Students Office.

[II] Students already at McGill who are making application to a professional faculty or to the Faculty of Graduate Studies and Research are not required to pay this fee.

[III] Application for Graduation Fee: Applications by students who expect to graduate at the spring convocation must be filed by April 1 of each year and by those who expect to graduate at the fall convocation by October 15 of each year. An application form will be mailed to each eligible student and must be returned to the Registrar's Office together with the application for graduation fee of $25 by the appropriate date listed above. It is the students' responsibility to inform the appropriate faculty or school that they expect to graduate in order to ensure that their names are included in the graduation list. *An additional $5.00 is required if a second degree or diploma is awarded at the same time e.g. B.C.L. and LL.B.*

[IV] The University will only issue complete transcripts recording all work attempted and results obtained in any and all programs, and partial transcripts will in no circumstances be issued.

[V] Students in Agriculture, Dentistry, Law, Management, Music and Physical & Occupational Therapy who are unable to attend registration may make arrangements to register by proxy. A Registration Proxy Form must be obtained from the appropriate Student Affairs Office. Students in other faculties or schools may be exempted from the late registration fee only on the written authorization of the Associate Dean or Director of the appropriate faculty or school.

7.2 Regulations for Payment of Fees

Cash payments over $50 will not be accepted

NEW STUDENTS

Students entering the University for the first time and those returning in Graduate Studies are required to pay their fees for the term in which they are registered either by mail or in person at the Accounting Office within 10 days after registration. For students registering in September the Winter term fees are due by January 15, 1983.

RETURNING STUDENTS

Returning students from the previous year (except in Graduate Studies) must pay their tuition fees for the Fall term, plus half their annual Students' Societies and Student Services fees by mail or in person to the Accounting Office before August 18, 1982, otherwise they will not be permitted to register. Instructions for paying fees in advance will be mailed to all returning students, either with their Sessional

Reports of Standing or a short time later. Students who have been notified by the University of the award of a scholarship, bursary or student loan, and who require this award for payment of the Fall term fees, must obtain permission to delay payment of fees from the Student Aid Office.

The Winter term fees are due by January 15, 1983. A late payment fee as stated above is charged for payment after this date.

LATE REGISTRATION

Students registering late **must** pay their fees at the time of registration.

Transcripts of records, diplomas and permission to re-register will be withheld if tuition fees as well as outstanding residence fees, library fines or other charges are not paid by the specified dates.

7.3 Regulations Concerning Withdrawal

Students who wish to withdraw from the University or from certain courses must secure the permission of the Dean or Associate Dean of their Faculty. The Office of the Associate Dean will supply the necessary form which must be completed and submitted. As the Student ID card is the property of the University, students withdrawing from all their courses must attach their Student Identity Card to the withdrawal form. A student considering withdrawal is strongly advised to consult the Dean or Associate Dean before making a final decision.

Tuition fees for the term in which the student withdraws are refundable as shown below and apply to individual course withdrawal as well as to complete withdrawal from the University. The effective date for refunds will be the date on which the official withdrawal form was completed. Dates of notification of the course instructors or of discontinuance of class attendance will not suffice. *If students wish to discuss the refund policy applicable to a special case, they must consult the Registrar's Office.*

Student Services and Students' Societies fees are not refundable after two weeks after the end of the final course change period in any faculty or September 30, whichever is earlier for the Fall term, and after two weeks after the end of the final course change period in any faculty or January 31, whichever is earlier for the Winter term.

Fall Term	**Refunds**
Up to two weeks after the end of the final course change period in any faculty or September 30, whichever is earlier	100% **(Less minimum charge of $50 in the case of complete withdrawal)**
Up to and including October 15	50%
After October 15	No refund
Winter Term	
Up to two weeks after the end of final course change period in any faculty or January 31, whichever is earlier	100% **(Less minimum charge of $50 in the case of complete withdrawal)**
Up to and including February 15	50%
After February 15	No refund

These dates do not necessarily and are not intended to coincide with the dates given in the academic policy for withdrawal from individual courses.

8 RESIDENTIAL FACILITIES

8.1 University Residences

McGill offers two types of residence accommodation:

1. Royal Victoria College houses undergraduate and graduate women students. It is on campus close to the major shopping and cultural areas of the city. Bus and subway stops are nearby.

2. Co-Educational Residences, consisting of Douglas, Gardner, McConnell and Molson Halls, house men and women, both undergraduate and graduate. They are located on the wooded slopes of Mount Royal, adjacent to the University playing fields and are approximately two blocks away from the main campus, and a ten-minute walk from the centre of downtown Montreal.

The academic staff of each hall consists of a Residence Director or Warden, Assistant Directors, and Residence Fellows or Dons. One of the main functions of the academic staff is to get to know students individually and, if a student requests it, to give advice on personal or academic matters.

ROOMS, MEALS AND FACILITIES

Except for a few double rooms, all rooms are for single occupancy and in each, besides a bed, there is a desk, chair, chest of drawers and closet. Linen is supplied at Royal Victoria College only and is exchanged weekly. In all halls residents are expected to make their own beds and keep their rooms in order. Each hall has coin-operated automatic washers and dryers, as well as ironing facilities. Pay telephones are located on each floor. In addition, most rooms are wired for a private telephone jack. There is storage space for ski equipment, trunks, and suit-

cases in every hall. Limited parking space is available in the co-ed complex only.

The halls have TV and recreation rooms. The co-ed residences have a sauna and universal gym; R.V.C. has the use of a swimming pool located within the building.

Residents at Molson, McConnell and Gardner Halls take their meals together in a large centrally located dining hall. Douglas Hall and the Royal Victoria College have their own dining areas. Royal Victoria College offers 19 meals a week while the Co-Ed Residences offer 15 meals a week (Monday to Friday). Bag lunches are available. There are kitchenettes on every wing of the co-ed residences where residents may keep food and prepare hot or cold snacks at any time. In addition, vending machines in every hall dispense soft drinks, sweets and pastries. Students can rent small refrigerators for their rooms.

STUDENT GOVERNMENT

Each hall has a Residents' Council, elected yearly by the residents at a designated time during the academic year. It is the job of Council to gather hall opinions, set policy, supervise financial affairs, and organize sporting and recreational activities within the residences.

McGill's residences are run for the convenience and advantage of the students living in them. What "rules and regulations" do exist are decided upon and administered by the students themselves. In each hall there is a House Committee which is elected from the student body at the beginning of each year to deal with any problems that may arise.

APPLICATION AND ADMISSIONS

Please note that the procedure governing residence admissions is entirely separate from that of University admissions. Residence application forms accompanied by a non-refundable application fee of $5 should be returned to the address below at the same time as the application for admission to McGill and in no case later than May 1:

Residence Secretary
McGill University
3935 University Street
Montreal, PQ H3A 2B4
(514) 392-4265

No applicant will be considered until official acceptance to McGill is received.

The University is able to house in residence only 1,050 students. Late applications are automatically placed on a waiting list if no space is available.

ROOM AND BOARD CHARGES

The rates for the regular session (1 September to 30 April) in 1981-82 were $3220 for single room and all meals (Royal Victoria College only), and for room and five-day meal plan $2780 (Douglas Hall only), $2540 (Gardner, McConnell and Molson Halls). Residents are not accepted on a room-only basis. Fees for a limited number of double rooms were approximately $200 less than those quoted above.

The sessional fees include an activity fee of $20 collected by the University on behalf of the Residents' Council of each hall.

These rates did not include meals during a 16-day period at Christmas, nor did the rate for the 5-day meal plan include meals on certain holidays like Labour Day, Thanksgiving, Easter, etc. Students may, however, occupy their rooms free of charge during the Christmas holiday period.

The residence fees for the 1982-83 session had not been set by the time this Announcement went into print. A correct fee sheet will be sent with the residence contract when an offer of accommodation is made. New rates will be calculated from those of the 1981-82 session plus inflation.

The residence fees for students at the **Macdonald Campus** are listed in the *Faculty of Agriculture and School of Food Science Announcement.*

OTHER REGULATIONS

Students accepted for residence must pay a security deposit of $50. The deposit is returned by mail during the summer to those who stayed the full academic session. Deductions, however, are made for wanton damages to the premises by the resident or by anyone when the particular individual responsible cannot be determined.

PAYMENT OF RESIDENCE FEES

All students: Fees may be paid in two equal instalments – the first before August 1, and the second before January 15.

8.2 Off-Campus Housing Service

Students unable to secure a room in residence should apply in person to the
Off-Campus Housing Service
Dean of Students' Office
3637 Peel Street
(514) 392-4554

This office maintains an up-to-date computerized list of available off-campus housing including rooms, apartments of various sizes and a list of students who want to share accomodation.

Students living off-campus may purchase a meal card entitling them to eat regularly at the Co-ed Residences. Individual meals can be purchased both at the Co-Ed Residences and at the Royal Victoria College by both men and women students living off-campus.

8.3 University Housing for Married Students

The University maintains a limited number of apartment units in several nearby locations for married students. As the demand for these apartments greatly exceeds the number of vacancies occurring each year, applications are restricted to married, full-time undergraduate students and graduate students who have not yet attained the Ph.D. or M.D. degree or equivalent. Further information and application forms may be obtained from the Real Estate Office, Apt. 202, 3575 University St., H3A 2B1.

8.4 Residences on the Macdonald Campus

Men in residence on the Macdonald Campus live in Brittain Hall. The residence for women is Stewart Hall, and Laird Hall is a co-ed residence for graduate students and seniors.

Each residence is under the control of a director who is appointed from the staff. All applications for residence and inquiries concerning the residences should be addressed to the Residence Office, Macdonald Campus of McGill University, Ste. Anne de Bellevue, PQ, H9X 1CO.

9 STUDENT SERVICES

9.1 Office of the Dean of Students

The Dean of Students is responsible for all Student Services. The Dean, Associate Dean and the Liaison Officer are available for consultation with students who would like to discuss individual problems or who seek information about the University and its procedures. Moreover, the Dean and Associate Dean act as unofficial "ombudsmen" and are prepared to help students who feel that "normal channels" are not sufficient in their cases.

The Office of the Dean of Students maintains an "open-door" policy and students are invited to drop by either with or without an appointment. This Office also acts as the coordinating centre for any special support services necessary for a student with a temporary or permanent physical disability.

Location: . . . . . .3637 Peel St.
Information: 392-5364

9.2 Services Offered by the Office of the Dean of Students

ORIENTATION SERVICE

The Orientation Service is a pre-registration counselling service designed to assist incoming students in selecting their courses and to introduce new students to the various aspects of the University. The service operates Monday to Friday, 9:00 a.m. to 4:00 p.m., from August 16 until September 3.

Location: . . . . . .Room 109, Dawson Hall
Information: 392-5084

ATHLETICS

McGill's facilities for athletics, physical education, and recreation are centred in the Sir Arthur Currie Memorial Gymnasium, the Percival Molson Memorial Stadium, the McConnell Winter Stadium and the Garfield Weston Pool. Sports facilities in the gymnasium include basketball, squash, badminton and volleyball courts; swimming pool; facilities for gymnastics, fencing and judo. Molson Stadium track facilities include a playing field for soccer, football and women's field hockey. The track may also be used for jogging.

The athletics instructional program provides a learning environment for students, staff and alumni in a variety of leisure time sports.

Numerous intramural and recreational activities provide opportunities for students, staff and alumni to participate for fun, fitness and competition both on and off campus.

On the intercollegiate level McGill competes in sports sponsored by the Québec Universities Athletics Association, the Ontario Women's Intercollegiate Athletics Association and the Canadian Interuniversity Athletics Union.

Complete information concerning the McGill athletics facilities and intercollegiate, intramural, and recreational sports programs may be obtained from the Athletics Office in the Currie Gymnasium or by calling 392-4725.

CHAPLAINCY SERVICE

A pastoral service is available through the campus chaplains independent of McGill administration. This service exists to serve the needs of all McGill students, families and staff. The service is related to areas such as problems of faith, pre-marriage counselling, marital problems, value systems and worship, and offers opportunity to work in social service programs. Information concerning individual denominational services is available.

Location: . . . . . .3484 Peel St.
Information: 392-5890

STUDENT AID AND FOREIGN STUDENT ADVISER'S OFFICE

The Student Aid section of this office handles all matters relating to financial assistance whether University, provincial or federal. Non-Canadian students, requiring certification of registration and/or letters of advice to Foreign Exchange Control Boards obtain these from this office.

The Foreign Student Adviser's section of this office deals with all matters which may affect non-Canadian students such as problems with the Canadian Department of Manpower and Immigration.

Location: . . . . . .3637 Peel St.
Information 392-5256

STUDENT COUNSELLING SERVICE

The Service provides a place where students of all faculties may discuss any problem confidentially. Among the services offered are individual and group therapy, awareness groups, human relations training, marital and sexual therapy, psychological assessment, vocational testing, effective reading courses, educational and career planning and the Educational and Career Information Library. The Counselling Service is a test centre in Québec for the Miller Analogies Test (MAT), and has information and applications for the Graduate Record Examination (GRE), Law School Admission Test (LSAT), Graduate Management Admission Test (GMAT), and the Medical College Admission Test (MCAT).

Location: . . . . . .3637 Peel Street.
Information 392-5119

HEALTH SERVICE

Students enrolled at McGill University have available to them a full range of medical service provided by the McGill University Health Service. Medical clinics operate daily, five days of the week from 9:00 a.m. – 5:00 p.m. A physician is always on call at night and on weekends and can be contacted by dialing the Health Service number. There are both male and female physicians on staff as well as a competent staff of college health nurses. Part of the Health Service consists of a Mental Health Section which makes available to students psychiatric and psychological help.

The service is available to all full-time students, undergraduate and post-graduate, and part-time students who pay Student Services fees. Students are asked to bring their Medicare cards or equivalent. All information is completely confidential and forms no part of any University record.

Health Insurance

In order to ensure medical coverage while a student at McGill, Canadian students from provinces other than Québec are advised to consult with the medicare and hospital insurance offices of their own province before coming to McGill. This is particularly important since residents of other provinces are not covered by Québec Medicare and Hospitalization while studying at McGill.

All non-Canadian students, and students who are not permanent residents are obliged to enrol in the McGill Non-Canadian Student Health and Accident Insurance Plan. Consequently, students and their dependents are covered to a large extent for medical and hospital expenses during the academic year. Information concerning this plan may be obtained at the general office of the Health Service or from the Liaison Officer to the Dean of Students.

Location: . . . . . 3637 Peel Street
Information 392-5441-5446

OFF-CAMPUS HOUSING SERVICE

See Section 8.2

TUTORIAL SERVICE

The Tutorial Service operates during the regular academic year and the Summer Session. It is available to all students who have paid Student Services fees. The tutors are senior or graduate students specializing in the majority of fields within the faculties. The cost to the student is minimal and is determined by the number of students in the group which never exceeds three persons.

Location: . . . . . 3637 Peel Street
Information 392-6741

STUDENT PLACEMENT

The Canada Employment Centre provides a comprehensive placement service to students who are Canadians or permanent residents seeking part-time, summer and permanent employment. The principal aims of the service are to encourage employers to make available a wide variety of job opportunities to McGill students; to assist students in finding suitable employment, by providing information on the labour market and arranging interviews with prospective employers; to encourage students to prepare for a career by doing their own research into the labour market, through library facilities, seminars, summer and part-time jobs. A similar service is located on the Macdonald campus.

Location: . . . . . 3637 Peel Street
Information 283-4411

9.3 Additional Services

BOOKSTORE

The McGill University Bookstore, located in the Bronfman Building at 1001 Sherbrooke Street, West, provides a comprehensive stock of current textbooks, reference material and academic supplies as well as items of general interest. It is administered by a Senate committee representing the students, the faculty and the administration.

EXTRA-CURRICULAR ACTIVITIES

There are over 250 activities and clubs which students may join. These include international clubs, religious groups, political clubs, fraternities, communications (Radio McGill), the McGill Daily and some 50 miscellaneous groups (such as science clubs, literary, theatrical and musical societies, chess and bridge clubs, and the McGill Outing Club). The University Centre, at 3480 McTavish

Street, provides club rooms for these acitivities in a modern four-storey building with cafeterias, a ballroom, lounges and an experimental theatre. Similar facilities exist on the Macdonald Campus in the Centennial Centre. Activities for graduate students centre in David Thomson House at 3650 Peel Street.

STUDENT INSTRUMENTAL AND CHORAL ENSEMBLES

The McGill Symphony Orchestra, the Wind Symphony, Concert Band, and Choral Ensembles have some vacancies for advanced instrumentalists or experienced choir singers. Acceptance into these ensembles is by audition usually held in September during the week prior to the beginning of classes. For further information, contact the office of the Faculty of Music (telephone 392-4501).

10 SCHOLARSHIPS AND FINANCIAL AID

ENTRANCE SCHOLARSHIPS AND AWARDS

The policy of the University is to recognize and honour scholarship, and the University's system of entrance scholarships and awards is designed to enable good students from all parts of Canada to attend McGill.

McGill offers a limited number of $5,000 and $2,500 renewable entrance scholarships for candidates demonstrating outstanding academic ability and qualities of leadership through participation in community affairs, student activities or athletics. Applications for these scholarships must be submitted by March 1st.

In addition, the University offers $500 awards which are granted on the basis of academic merit only to candidates who have obtained or expect to obtain very high first class academic standing. Applications for these awards must be submitted by March 1st for September awards and by November 1st for January awards.

A student who has been selected for an entrance scholarship or award, and is in financial need, may have the amount of the award substantially augmented to a total of full tuition fees plus the cost of board, residence and books depending on need. All applicants for aid must first apply for maximum government grants or other assistance for which they may be eligible.

Entrance scholarships and awards are open only to Canadian citizens or permanent residents who will have one year's residence in Canada at the time of registration. They are awarded to students entering a full-time undergraduate degree program and in addition, Dentistry, Law and Medicine.

Students wishing to be considered for entrance scholarships and awards must complete an Application for Entrance Scholarships which may be obtained from the Scholarships Office, McGill University, 845 Sherbrooke St. W., Montreal, PQ H3A 2T5.

AWARDS TO McGILL STUDENTS IN COURSE

Once a student is in course at McGill all undergraduate scholarships, prizes and medals are awarded on the year-end examination results, and *no applications are required.*

Scholarships are awarded only to full-time students taking a program of study leading to a degree. Only those students who have completed at least 27 credits during the regular session (excluding Summer Session) are eligible for scholarships and awards. Scholarships are awarded or renewed only if an adequate scholarship standing is attained.

Students who are in need of financial assistance should apply directly to the McGill Student Aid Office.

Full information concerning undergraduate awards and bursaries is contained in the *Undergraduate Scholarships and Awards Announcement* which may be obtained from the Registrar's Office.

Inquiries concerning undergraduate scholarships should be referred to the Scholarships Office in the Registrar's Office.

BURSARIES AND LOANS

Applications for McGill bursaries and loans should be directed to the Student Aid and Foreign Student Adviser's Office, McGill University, 3637 Peel Street, Montreal, PQ H3A 1X1. These awards are made on the basis of financial need.

All applicants for aid must first apply for maximum government grants or other assistance for which they may be eligible.

PROVINCIAL BURSARIES AND LOANS

In all cases, a basic qualification is that applicants must be Canadian citizens or permanent residents with one year's residence and domiciled in the province to which they apply.

In all provinces, except Québec and Ontario, the provincial authority listed below administers the Canada Student Loan Plan (Federal) as well as their own programs. The addresses are as follows:

Québec: Apply after May 1, at the Student Aid Office, McGill University, 3637 Peel Street, Montreal, PQ H3A 1X1.

Ontario: Apply after May 1 to the Ministry of Colleges and Universities, Students Awards Branch, Mowat Block, Queen's Park, Toronto, ON M7A 2B4.

New Brunswick: The Director of Student Aid, Department of Youth & Welfare, Centennial Building, Fredericton, NB.

Yukon Territory: The Students Financial Assistance Awards Committee, c/o Superintendent of Education, Box 2703; Whitehorse, YT Y1A 2C6.

Northwest Territories: Director of Education, Government of the Northwest Territories, Yellowknife, NT XOE 1HO.

Manitoba: The Student Aid Office, Department of Youth and Education, 413 Robert Fletcher Bldg., 1181 Portage Ave., Winnipeg, MB.

For the Provinces of Newfoundland, Prince Edward Island, Nova Scotia, Saskatchewan, Alberta, British Columbia: write to the Provincial Department of Education.

United States Citizens

The National Defence Loan is not tenable in Canada, but several states have long term loan plans which are tenable here. Students should inquire at the Department of Education in their state capital and also at local banks which may operate a Higher Education Loan Plan.

GRADUATE FELLOWSHIPS

Full information concerning postgraduate awards is contained in the *Postgraduate Fellowships, Bursaries, Loans and Prizes Announcement* which may be obtained from the Fellowships Office, Faculty of Graduate Studies Research, or from the Registrar's Office.

Inquiries about graduate fellowships, etc., which are open to graduates of other universities as well as of Canadian universities should be addressed to the Fellowships Office, Faculty of Graduate Studies and Research. Inquiries about assistantships should be directed to the individual Departments.

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  - ☐ Food Administration
  - ☐ Dietetics
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The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees, schedules and the revision or cancellation of particular courses.

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CALENDAR FOR SESSION 1982 - 1983

1982

June 24, Thursday	LA FÊTE NATIONALE DU QUÉBEC Administrative Offices closed
July 1, Thursday	DOMINION DAY, Administrative Offices closed
August 10, Tuesday to August 12, Thursday	Supplemental Examinations
August 26, Thursday	Students registering for 372-420A report for class at 0900 hrs. 0900 hrs.
August 30, Monday	Students registering for 375-401A, and 349-418A and 346-356A report for class at 0900 hrs.
September 6, Monday	LABOUR DAY Administrative Offices closed
September 7, Tuesday	Fall term registration for all new students 0900 to 1200 hrs. Returning students 1400 to 1600 hrs.
September 8, Wednesday	Lectures begin for Fall term
September 8, Wednesday	Track Meet. Classes cancelled from 1300 hrs.
September 16, Thursday	Late Registration. Open Students' Society meeting, 1100 to 1200 hrs.
September 24, Friday	Last day for adding courses for Fall term.
October 2, Saturday	Annual Reunion Macdonald Branch of McGill Graduates' Society
October 11, Monday	THANKSGIVING DAY. Classes cancelled. Administrative Offices closed.
October 16, Friday	Last day for withdrawal from courses without financial penalty.
October 23, Friday	Last day for withdrawal from courses without academic penalty.
November 4, Thursday	Scholastic Award Banquet
T.B.A.	Fall Convocation. Classes as usual.
December 7, Tuesday	Last day of lectures for Fall term in all programs.
December 10, Friday to December 21, Tuesday	Fall term examination period.

1983

January 3, Monday to January 7, Friday	Winter term counselling and registration for all new students in Agriculture and Food Science
January 10, Monday	Lectures begin for Winter Term
January 28, Friday to February 5, Saturday	Winter Carnival. Classes as usual except Tuesday February 1 — Ski Day, Classes are cancelled.
January 29, Friday	Last day for adding courses for Winter term.
February 10, Thursday	Macdonald College, Founder's Day (Sir William C. Macdonald born February 10, 1831; died June 9, 1917)
February 11, Friday	Last day for withdrawal from Winter term (B and D) courses without financial penalty.
February 18, Friday	Last day for withdrawal from Winter term (B and D) courses without academic penalty.
February 18, Friday to February 20, Sunday	Macdonald Royal
February 28, Monday and March 1, Tuesday	Mid-term holiday. Classes cancelled.
March 10, Thursday	Open Students' Society meeting. 1100 to 1200 hrs.
March 23, Wednesday	Project presentations. Classes cancelled.
April 1, Friday to April 4, Monday	EASTER. Administrative offices closed.
April 14, Thursday	Last day of lectures in all programs.
April 18, Monday to April 27, Wednesday	Winter term examination period.
May 2, Monday to May 13, Friday	Surveying School of the Department of Agricultural Engineering (336-214L)
May 23, Monday	VICTORIA DAY. Administrative Offices closed.
June 3, Friday	CONVOCATION

1 STAFF

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PAQUETTE, GUY, B.Sc., M.Sc., Ph.D.(Montr.) **Assistant Professor of Agricultural Chemistry**

PELLETIER, REAL L., L.S.A.(Montr.), Ph.D.(Wis.), M.Sc.(McG.) **Professor of Plant Pathology**

PERRATON, ETIENNE, B.Sc.(Laval), M.Sc.(McG.) **University Lecturer in Agricultural Engineering**

PETERSON, JEAN F., B.A.(Grinnell), M.Sc., Ph.D.(Nebr.) **Associate Professor of Plant Pathology**

PHILLIP, LEROY E., B.Sc.(Agr.), M.Sc.(McG.), Ph.D.(Guelph) **Assistant Professor (Special Category) of Animal Science**

RAGHAVAN, VIJAYA G.S., B.Eng.(Bangalore), M.Sc.(Guelph), Ph.D.(Colo. State) **Assistant Professor of Agricultural Engineering**

RAU, MANFRED E., B.Sc.(Purdue), M.Sc., Ph.D.(McG.) **Associate Professor of Parasitology (Faculty of Science)**

RAYMOND, DIANE A., B.Sc.(H.Ec.)(Man.), M.Sc.(Drexel), P.Dt. **Associate Professor of Food Science**

ROWLES, WILLIAM, B.Sc.(Sask.), M.Sc., Ph.D. (McG.) **Emeritus Professor of Agricultural Physics**

SACKSTON, W.E., B.S.A.(Man.), M.Sc.(McG.), Ph.D.(Minn.) **Professor of Plant Pathology**

SANFORD, LEE M., B.Sc.(Mass.), M.Sc.(Guelph), Ph.D.(Man.) **Assistant Professor of Animal Science**

SCHUEPP, PETER H., Dipl. Sc.Nat.(Zurich), Ph.D.(Tor.) **Associate Professor of Agricultural Physics and Chairman of the Department of Chemistry and Physics**

SEYMOUR, NORMAN R., B.Sc., M.Sc.(Man.), Ph.D.(McG.) **Auxiliary Professor of Renewable Resources**

SINHA, RAMESH C., B.Sc.(Agra) M.Sc.(Lucknow), Ph.D., D.Sc.(Lond.) **Auxiliary Professor of Plant Science**

SMITH, THOMAS G., B.A., M.Sc.(Bishop's), Ph.D.(McG.) **Auxiliary Professor of Renewable Resources**

SMYRL, TERRANCE G., B.Sc., M.Sc.(Man.), Ph.D.(Alta.) **Assistant Professor of Food Science**

STEPPLER, HOWARD A., B.S.A.(Man.), M.Sc., Ph.D. (McG.), F.A.I.C. **Professor of Agronomy and Chairman of the Department of Plant Science**

STEWART, KATRINE A., B.Sc.(Agr.)(U.B.C.), Ph.D.(Reading) **Assistant Professor of Horticulture**

STEWART, ROBIN K., B.Sc.(Agr.), Ph.D.(Glas.) **Professor of Entomology and Chairman of the Department**

TANNER, CHARLES E., B.Sc.(Purdure), M.Sc., Ph.D.(McG.) **Professor of Parasitology (Faculty of Science)**

TITMAN, RODGER D., B.Sc.(McG.), M.Sc.(Bishop's), Ph.D.(U.N.B.) **Associate Professor of Wildlife Biology**

TOUCHBURN, SHERMAN P., B.S.A., M.S.A. (U.B.C.), Ph.D.(Ohio State) **Professor of Animal Science**

VICKERY, VERNON R., B.Sc.(Agr.), M.Sc., Ph.D.(McG.) **Professor of Entomology and Curator, Lyman Entomological Museum and Research Laboratory**

WATERWAY, MARCIA J., B.A.(Calvin Coll.), M.S.(Wis.) **Faculty Lecturer in Plant Science and Curator, McGill University Herbarium**

WATSON, ALAN K., B.Sc.(Agr.), M.Sc.(U.B.C.), Ph.D.(Sask.) **Associate Professor of Agronomy**

WEBER, SHIRLEY M., B.Sc.(H.Ec.)(Man.), M.S.(Minn.), Ph.D.(Cornell) **Professor of Food Science and Director of the School of Food Science**

YOUNIE, CHRISTINE (Mrs.K.), B.Ed.(McG.), M.Sc. (Syr.) **Faculty Lecturer in Food Science**

YULE, WILLIAM N., B.Sc.(Glasgow), Ph.D. (Nott.) **Associate Professor of Entomology**

ZARKADAS, CONSTANTINOS G., B.Sc.(Agr.), M.Sc.(McG.), Ph.D.(Alta.) **Auxiliary Professor of Agricultural Chemistry**

2 GENERAL INFORMATION

2.1 MACDONALD COLLEGE

Macdonald College, which was founded and endowed by the late William C. Macdonald in 1907 as a residential college for Agriculture, Household Science and the School for Teachers, is incorporated with McGill University. The Faculty of Agriculture, which includes the School of Food Science, is located on the Macdonald campus at Ste. Anne de Bellevue and the School for Teachers, now the Faculty of Education, is located on the Montreal campus.

Ste. Anne de Bellevue, Québec, is 32 kilometres west of Montreal, and can be reached by Canadian Pacific Railways, provincial highways No. 2 and No. 20 and the Trans-Canada highway. International travellers by air book to the Montreal International Airport at Mirabel, and drive to Dorval, which is approximately 16 kilometres east of the Campus.

POST OFFICE

The campus has its own post office and mail should be addressed to Macdonald Campus of McGill University 21,111 Lakeshore Road, Ste. Anne de Bellevue P.Q. H9X 1C0.

FACULTY OF AGRICULTURE

The work of the Faculty falls into three main divisions: teaching, research, and extension in Agricultural Sciences, Biological Sciences and Renewable Resources Development. Teaching and research form the major part of their work. Extension work is undertaken by departments as the need or opportunity may arise.

SCHOOL OF FOOD SCIENCE

The School of Food Science is an administrative unit within the Faculty of Agriculture. The function of the School is teaching to provide the professional qualifications necessary for dietetics and food technology and to provide strong academic training in consumer services, home economics education, nutrition, food chemistry and food administration.

THE INSTITUTE OF PARASITOLOGY AND NATIONAL REFERENCE CENTRE FOR PARASITOLOGY

The Institute, within the Faculty of Science, is located in its own building on the Macdonald Campus. While it is primarily a research institute with teaching commitment at the graduate (M.Sc. and Ph.D.) level, some of the professors offer undergraduate courses within the Faculty of Agriculture. The current research projects in-

clude wide-ranging investigations on fish and wildlife parasitology, and epidemiology, immunology, pathology and hostparasite relations of some important parasitic infections of man and animals. The Institute is contracted to act as the National Reference Centre for Parasitology by Health and Welfare Canada and as the Laboratoire de Parasitologie by the Ministère des Affaires Sociales du Québec.

THE LYMAN ENTOMOLOGICAL MUSEUM AND RESEARCH LABORATORY

Originally established in 1914 and formerly housed in the Redpath Museum, the Lyman Entomological Museum was moved to the Macdonald Campus in 1961. It houses the largest University collection of insects in Canada, second only in size to the National Collection. The Museum also has an active graduate research program in association with the Department of Entomology. Study facilities are available, on request from the Curator or the Director, to all bona fide students of entomology. Visits by other interested parties can also be arranged.

BRACE RESEARCH INSTITUTE

The Brace Research Institute, attached to the Faculty of Engineering, is located on the Macdonald Campus. The principal area of activity is research into water supply for arid areas, including desalination of saline water. This involves the use of solar, wind and biomass energies, greenhouse agriculture and appropriate technology.

2.2 FACILITIES

A major part of the Faculty is housed in the recently built Macdonald-Stewart Building which is the focal point for the new Macdonald Campus. While retaining several of the picturesque brick buildings with their red tile roofs, established by Sir William Macdonald on the shore of Lake St. Louis in 1907, the University has leased the remainder of the buildings and surrounding campus to the West Island CEGEP John Abbott College. Some buildings and facilities such as the Laird, Stewart and Brittain residences and the sports facilities are shared by both institutions.

Laboratory and lecture rooms are well supplied with modern and efficient teaching facilities, while the reference section of the Library and the research laboratories associated with the various science departments are well equipped to permit the vigorous investigation of problems at the post-graduate level.

The land associated with the Campus is situated at the western end of the Island of Montreal, and is in the Town of Ste. Anne de Bellevue. The campus proper consists of about 200 acres south of Routes 2-20. The Macdonald farm represents a wide variety of the soils of the Ottawa St. Lawrence Valley Lowland. The principal purpose of the farm is to provide facilities for teaching, demonstration, and applied research by the various departments of the faculty.

The Morgan Arboretum, established in 1945, has 540 acres of natural woodlands and plantations set up and operated as a model for integrated multiple use forestry. It combines forest production with intensive recreational use in an urban region. The northern hardwood forest is used for research, teaching, and demonstration projects relating to forest resources and values. Groups of all the Canadian native trees and many useful and important exotics are also present. The Arboretum features a botanical trail, a bird sanctuary, 20 kilometres of wooded trails, a variety of forest ecosystems, soil and water conservation projects, forest operations such as reforestation, plantation management, timber harvesting and maple syrup production, and related forestry-wildlife ecological activities. An intensive nature interpretation program is offered for school children.

MACDONALD LIBRARY

The library occupies levels two and three of the Barton Building. The collection includes research and teaching materials for agricultural, biological and food sciences. it is a depository for many government publications and subscribes to 975 serial titles. Among its special collections is the Lyman entomological book and journal library. The total collection now numbers 80,500 volumes of books and journals, and 17,000 volumes of government documents. Reference services include computerized bibliographic searching and telex supported inter-library loan facilities.

SPECIAL FACILITIES

Students with temporary or permanent physical disabilities may obtain information concerning special support services from the office of the Associate Dean (Student Affairs and Public Relations).

2.3 EXTENSION DEPARTMENT

The Extension Department functions as liaison between the Faculty of Agriculture and those involved in agriculture, including Federal and Provincial Departments and agencies. The Extension Department also serves the community on a provincial, federal and international level by providing information, education and assistance in community development to the rural population and other interested groups or organisations.

COMMUNITY PROGRAMS DIVISION

This division is responsible for the Macdonald Campus extension activities in rural communities. Through the organization of seminars and workshops in the community, through con-

sultation with individuals and groups, the resources of the Macdonald Campus and the University are made available to those without daily access to the campus. In addition, radio items and newspaper columns provide a link between the campus and the agricultural community.

This division also coordinates and encourages the extension services of various departments of the Faculty of Agriculture. These are represented by such activities as the Soil Testing Service, the Dairy Herd Analysis Service and the Agricultural Engineering Consulting Service. Each of the departments welcomes requests for information on subjects relating to agriculture, environment and food science.

EXTENSION EVENING COURSES

Over 40 courses are offered in a wide variety of technical and popular subjects. These courses are generally offered in the evening during the regular academic year.

As well, several conferences, workshops and seminars are held each year on and off the campus. The Extension Department also cooperates with regional school boards and community schools in planning programs and assisting in adult education programs.

MACDONALD JOURNAL

The Macdonald Journal, published 10 times a year, concentrates on articles on agriculture, related sciences, government policies and rural community affairs. Articles and reports written by faculty, Le Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec (M.A.P.A.Q.) and other contributors keep its subscribers up to date on new developments in agriculture and related areas.

CAMPUS TOURS

Visits to the Campus from individuals or groups with a common interest in the farm and the home, are always welcomed.

Groups of fifteen or more requiring meals are asked to give two weeks' advance notice and to confirm the numbers in the group not later than three days before arrival. All requests for the above programs and for visiting privileges should be addressed to the Director, Extension Service, P.O. Box 284, Macdonald Campus of McGill University, Ste. Anne de Bellevue, PQ, H9X 1C0, who will be pleased to quote rates for meals, if required.

2.4 STUDENT PLACEMENT SERVICE

The Canada Manpower Service, in cooperation with the faculty, has established a Student Placement and Career Counselling Office on the campus to bring together graduating students and potential employers. In addition to permanent employment, the Service also endeavours to assist both undergraduates and employers interested in summer employment and part-time work. The Placement Office operates on a year-round basis, and its services are available to both students now registered and graduates of earlier years.

2.5 SUMMER SCHOOL

Courses are available on the Macdonald Campus during the summer session. See the McGill University *Summer Session Announcement*, available from the Registrar's Office, Macdonald Campus.

2.6 REGISTRATION

Students must register at the times indicated in the calendar for the program and year in which they have been accepted, and before entering residence to obtain a residence card during registration. Registration at a later date is permitted only to those who obtain the consent of the Dean of the Faculty or the Director of the School of Food Science.

Upon registering, students are required to sign the following declaration: "I hereby accept and promise to observe the statutes, rules and regulations of McGill University and of the faculty or faculties in which I am registered."

Students are not permitted to enter any class until they have registered.

2.7 FEES

The University reserves the right to make changes without notice in its published scale of tuition, board and room, and other fees.

TUITION AND OTHER FEES

Fees are $19.00 per credit for Canadian Students and include all the regular charges such as registration, tuition, laboratories and libraries. Student Services fees and Students' Societies fees are separately assessed and must be paid at the same time as the tuition fees.

A student who is taking an academic load of 30 credits would pay $570 in tuition fees ($19 × 30) plus fees for Student Services and Students' Societies. Tuition fees will vary according to the number of credits taken but Student Services and Students' Societies fees per term will be as shown below for all full-time students. There are no tuition fees for the Diploma in Agriculture.

FOREIGN STUDENTS TUITION FEES

New foreign students are required by the Quebec Government to pay 60% of the estimated cost of their studies. For 1982-83 this is $4,350 per year or $145 per credit. Returning foreign students will pay $3500 per year or $116.70 per

credit and an additional $1000 per year in each subsequent year until they reach the rate paid by newly admitted foreign students.

FULL TIME STUDENTS (PER TERM)

Diploma in Agriculture ..... No tuition fees
Student Services $47.50
Macdonald Students' Society 16.50
Centennial Centre 7.50
Class Fee 1.00
Undergraduate Societies
Agriculture $1.00
Food Science $1.00

PART TIME, SPECIAL AND VISITING STUDENTS

The tuition fee assessment is $19 per credit. In addition, the following fees per term will be assessed:

a) If taking 3 credits:
Student Services $9.50
Macdonald Students' Societies ... 11.50

b) If taking more than 3 but less than 7 credits:
Student Services 15.75
Macdonald Students' Societies ... 15.00

c) If taking 7 or 8 credits:
Student Services 25.25
Macdonald Students' Societies ... 19.50

d) If taking 9 or more credits:
Student Services 47.50
Macdonald Students' Societies ... 26.00

FOREIGN STUDENTS HEALTH INSURANCE

Compulsory Health Insurance ..... $138.00 for single and $271.00 for married students.

SPECIAL FEES AND PENALTIES

Application for Admission (not refundable) $15.00
Late registration (unless excused by the Dean or Director) 50.00
Late payment during first thirty days after specified date 10.00
Late payment after thirty days 25.00
Residence applications fee (not refundable) 10.00
Application for Graduation Fee** (including those who graduate in absentia) 25.00
Duplicate diploma 25.00
Transcript of student's record:
First copy 2.25
Additional copies made at the same time, each ..... .75
Re-reading examination paper 10.00
Supplemental examination, per paper 10.00

** Application for Graduation fee: Applications by students who expect to graduate at the Spring Convocation must be filed by April 1st of each year and by those who expect to graduate at the Fall Convocation by October 15th of each year. An application form will be mailed to each eligible student and must be returned to the Registrar's Office, McGill University, together with the fee of $25.00 by the appropriate date listed above. It is the students' responsibility to ensure that their names are included in the graduation list by notifying the Registrar's Office, Macdonald Campus.

BOARD AND RESIDENCE

Board and Residence are paid separately. The approximate fess per session are:

Board $1,100.00*
Room (double occupancy) $1,060.00*

The Dining Room is open 5 days per week exclusive of statutory holidays designated by the University. Students buy individual meals on a cafeteria basis and pay cash or with a meal card.

The residence fees for 1982-83 session had not been set by the time this Announcement went into print. A correct fee sheet will be available with the residence application forms when an offer of accommodation is made. New rates will be calculated from these of the 1981-82 session plus inflationary factors.

Any residence rates shown herein are only to be used as guidelines for budgeting purposes and are subject to change without notice.

APPROXIMATE COST PER SESSION

	Total Fees	Board (optional)	Residence	Textbooks Supplies, etc. (estimate)	Total
Undergraduates (30 credits)	$ 717.00	$1,100.	$1,060.*	$250.	$3,127.00
Diploma in Agriculture	$ 147.00	$1,100.	$1,060.*	$100.	$2,407.00

Room (Double occupancy) $1,060.00*
(Single occupancy) $1,190.00*

*Subject to change without notice.

SUNDRY

Books

The prescribed textbooks, and classroom and laboratory supplies, may be purchased at the Campus Book Shop — estimated minimum cost is $250.00

Supplies

Materials and supplies required for classes in Textiles and Clothing are provided by the students concerned and purchased at the direction of the instructor.

Uniforms

Uniforms are required for food laboratories; students in the B.Sc.(F.Sc.) program will be advised of the uniform requirements on acceptance or promotion.

REGULATIONS CONCERNING PAYMENT OF FEES

Cash payments of more than $50.00 will not be accepted.

NEW STUDENTS

Students entering the University for the first time and those returning in Graduate Studies are required to pay their fees either by mail or in person at the Cashiers Office, Laird Hall, Macdonald Campus within 10 days after registration.

RETURNING STUDENTS

Returning students from the previous year (except in Graduate Studies) must pay their tuition fees by mail or in person to the Cashiers Office, Laird Hall, Macdonald Campus before August 20, 1982, otherwise they will not be permitted to register. Instructions for paying fees in advance will be mailed to all returning students, either with their Reports of Standing or a short time later. Students who have been notified by the University of the award of a scholarship, bursory or student loan, and who require this award for payment of their fees, must obtain permission to delay payment of fees from the Student Aid Office.

LATE REGISTRATION

Students registering late must pay their fees at the time of registration.

GENERAL

1. Fees may be paid in two installments, one at the beginning of the session, and one by January 14. Information on payment of fees is available from the Cashier's Office, Laird Hall.
2. A late payment fee of $10.00 is charged for payments during the first 30 days after specified due date and $25.00 thereafter.

In special cases of hardship, application may be made for financial assistance. See section on Scholarships, Prizes, Bursaries and Loan Funds.

3. As soon as possible after the dates prescribed for the payment of tuition fees, a list of registered students whose accounts with the Cashier are in arrears will be sent to the Dean or Director of the Faculty or School concerned, on receipt of which the Dean or Director may suspend these students from attendance and they will not be readmitted to classes until the account is settled or a satisfactory arrangement is made with the Cashier.
4. Students who have tuition fees or other accounts (i.e. residence fees, parking or library fines etc.) outstanding at the end of the session will not be entitled to re-register or to receive transcripts of records or diplomas, until these accounts are paid.
5. Students who withdraw during the course of the academic year must do so at the Registrar's Office and return their identity card. There is a minimum charge of $50.00 in the case of complete withdrawal.
6. In the case of students who leave before the end of the academic year, but receive full credit for the year towards their degree, there shall be no refund of tuition fees.

7. In the case of students who leave during the academic year and do not receive credit beyond the period of their attendance, tuition fees shall be refunded on the basis of a formula based on length of attendance. If students wish to discuss the refund policy applicable to a special case, they must consult the Registrar's Office.

8. Student Services and Students' Societies fees are not refundable after two weeks after the end of the final course change period in any faculty or September 30, whichever is earlier for the Fall Term, and after two weeks after the end of the final course change period in any faculty or January 31, whichever is earlier for the Winter term.

9. Residence fees are payable in accordance with regulations of the Fee Payment Option selected at the time of signing a Residence Lease.

10. Avoidable breakage or damage to University property or equipment is charged to the student responsible on receipt of a report from the chairman or director of the department concerned.

The Cashier's Office is open to receive payments and to provide student fee information from 9:15 a.m. to 12:15 p.m. and 1:45 p.m. to 4:30 p.m. Monday to Friday.

All cheques, money orders, etc., should be drawn to the order of "Macdonald College", and should be made payable in Canadian funds.

2.8 RESIDENCE

Men students in residence live in Brittain Hall, named in honour of the late Dr. W.H. Brittain, Vice-Principal of Macdonald College from 1935 to 1955. The residence for women is Stewart Hall, named in honour of the late Mr. and Mrs. Walter M. Stewart, long-time friends and benefactors of the College. Laird Hall, named in honour of the late Dr. Sinclair Laird, Director of the School for Teachers from 1913 to 1949 is a co-ed residence for graduate students and seniors.

Each residence is under the control of a director who is appointed from the staff. All applicants for residence and inquiries concerning the residences should be addressed to the Residence Office, P.O. Box 302, Macdonald Campus of McGill University, Ste. Anne de Bellevue, PQ. H9X 1C0.

APPLICATION FOR RESIDENCE ACCOMMODATION – NEW STUDENTS

A form for applying for residence accommodation and detailed information about the residence can be obtained from the Residence Office. Students are advised to apply as early as possible. When the form is received it must be completed and returned immediately to the Residence Office, P.O. Box 302, Macdonald Campus of McGill University, Ste. Anne de Bellevue, PQ. H9X 1C0. A $10.00 application fee (not refundable) must accompany the application for residence accommodation.

* Please note that it is not possible to alter any of the terms of the original application (Lease) except in major circumstances.

APPLICATION FOR RESIDENCE – RETURNING STUDENTS

A re-admission form will be given out to returning resident students and must be returned to the Residence Office prior to March 15 together with the $10.00 application fee.

ROOM OCCUPANCY

Students will not be admitted to residence before the date set for registration. Students from foreign countries or students from a distance may be admitted early in exceptional circumstances. Permission must be requested by letter and a reply obtained in writing from the Residence Office before the student leaves home.

Students who return to write supplemental examinations will be admitted to residence on a specified date and must make application to the Residence Office on the form sent by the Registrar's Office with notice of the examination schedule.

Student officers may be admitted before the opening date of courses, if permission is granted by the Residence Office.

Students must vacate their rooms at the end of the regular session. The residences are used in the summer for meetings, conferences and summer school and the rooms must also be available for cleaning and maintenance. Only under exceptional circumstances will a student be granted permission to remain in residence during the summer months. Exceptions may be made for students who are employed on the Campus or registered for summer courses. In all cases permission must be requested from the Residence Office.

RESIDENCE FEES

Residence fees cover only the regular periods when classes are in session. An additional fee is charged for residence accommodation during the supplemental examination period in August.

NON-RESIDENT STUDENTS

Students living at home or out of residence are subject to College discipline as outlined under CONDUCT AND DISCIPLINE.

Non-resident students may not stay overnight in any residence without permission of the Residence Office. Common rooms are provided for non-resident students in the Centennial Centre.

Meals are available in the dining room for non-resident students.

Lockers are available in the basement of the Centennial Centre and of the Macdonald Stewart Building for non-resident students. These may be arranged for at the Centennial Centre one week after registration.

STUDENT AUTOMOBILES

Students will be allowed to park automobiles on the campus provided they observe the parking regulations and other rules applicable to students' automobiles. Students are required to obtain a parking permit on registration day or at the Campus Security Office during regular office hours. Permits will not be issued to students who do not carry car insurance for public liability, property damage and personal injury. Students must park in Student Parking Areas only.

2.9 EXTRACURRICULAR ACTIVITIES

The program of extracurricular activities is designed to complement the program of studies and to promote both fellowship and wider experiences for the student.

The Athletics Department is located in the Stewart Complex which is found west of the Centennial Centre. Facilities available to Macdonald students are a gymnasium, pool, weight room, arena, two large fields and complete changing and locker facilities.

The four types of programs offered are instructional, recreational, intramural and intercollegiate. There are over sixty programs in all. The most popular is that of instructional which offers horseback riding, fitness, jazz ballet, and aquatics to name a few.

The athletics program is designed to help students relax in their spare time. It also allows the students to learn, practise or use a skill which they have developed during one of the many programs offered.

The Athletics Department has its own handbook with complete information on all programs. This is available at registration or at the Athletics Office in the Stewart Complex or at the Registrar's Office.

The Macdonald Campus Students' Council sponsors a newspaper, The Harvest, a Yearbook, Clan Macdonald, a photography department, a Winter Carnival which is highlighted by a widely attended international woodsmen's competition and numerous other activities. Dances and informal get-togethers are features of student life with the Centennial Centre a favourite meeting place.

Macdonald is proud of its Student Union Building. At the corner stonelaying ceremony in October of 1967 it was fittingly named "Centennial Centre". The building includes many facilities for extracurricular activities, recreation and relaxation, including a lounge, snack bar, meeting and board rooms, publication offices, ball room, and areas set aside for table tennis, billiards, a bar area, and a discothèque. The Centennial Centre is a students' facility and students are active in all facets of planning and management of this attractive focal point of campus life.

On Founder's Day, which is celebrated each year on February 10, a special dinner and a musical or dramatic program are provided through the generosity of Mr. and Mrs. David M. Stewart

2.10 UNIVERSITY HEALTH SERVICE

The University Health Service comprises two clinics, one on the Macdonald campus, provided by the John Abbott College Health Services, in the Hertzberg Building, Room 139, and the other on the Montreal Campus in the Powell Student Services Building at 3637 Peel Street. Equal importance is placed on the physical and mental health of students and the medical staff are appropriately qualified to deal with both aspects.

The John Abbott College Health Services Clinic is open daily, five days a week from 8:00 a.m. to 4:30 p.m. whereas the Montreal Campus clinic operates from 9:00 a.m. to 5:00 p.m. Students will be reimbursed for travel expenses to the University Clinic or to other medical centres on the West Island upon application to the Office of the Associate Dean, Student Affairs.

PARTICIPATION IN ATHLETICS

Students wishing to participate in interuniversity athletics in any academic year must first obtain a permit from the University Health Service. Permission will depend upon the initial medical report from the student's own physician, supplemented by such other medical examination as may be thought necessary in the Health Service. Students who have received medical attention for an illness or accident must be declared fit by the Health Service before they may again participate in athletics. Before participating in any other form of athletics, it is suggested that the student has a physical examination.

MEDICAL EXPENSES

The cost of medical examinations carried out at the Health Services and of Medical care obtained through the general or mental health clinics is covered in part by University Funds. Residents of Québec will be covered for services under Medicare. Non-Québec Canadian Students are strongly urged to obtain comprehensive health insurance in their home province. The cost of drugs prescribed by the Health Service will be borne by the student.

FOREIGN STUDENTS

All full-time foreign students must enrol in the McGill Non-Canadian Health and Accident Insurance plan which is available on a group basis at the cost of $138.00 per single student or $271.00 for a married student per year. They are required to pay the annual premium with the first instalment of their fees. In general, the policy provides for payments towards hospital, surgical, medical, diagnostic and other medical expenses. Students should make themselves aware of the limitations of such a policy.

2.11 McGILL COUNSELLING SERVICE

Professional counselling is available to assist students on the Macdonald Campus. Appointments may be arranged by calling 457-2175.

2.12 CONDUCT AND DISCIPLINE

The Vice-Principal of Macdonald Campus and Dean of the Faculty of Agriculture has jurisdiction over all offences committed by students registered at Macdonald and over all offences committed by students on or about the Macdonald Campus. Directors of residences have jurisdiction over all offences committed in or about their respective residences (McGill University – Code of Student Conduct and Disciplinary Procedures, 1981).

Students found guilty of improper conduct, violation of rules or wilful damage to persons or property, shall be liable to discipline as set forth in the Code of Student Conduct and Disciplinary Procedures approved by the Senate of McGill University in 1981, a copy of which is available on request from the Associate Dean, Student Affairs. The Code specifies that discipline may include: imposition of fines or assessments for damage caused by individuals or groups; posting of security for good behaviour; reprimand; imposition of conduct probation; suspension or expulsion from classes or residence; expulsion from the University.

Any student who is unwilling to submit to the demands of university life, or whose work is definitely unsatisfactory, may be placed on probation, or may be required to withdraw from the University.

All students are obliged to inform themselves of the current rules and regulations. A few of these are listed below but the main body of them will be found in other available documents.

Possession or consumption of liquor by students is forbidden on the campus, except in authorized places and with special permission.

Initiation or hazing in any form is forbidden.

Unauthorized entrance to buildings is forbidden. Violation of this rule is sufficient reason for expulsion.

Gambling is not permitted on Campus.

Tampering with fire fighting equipment is forbidden.

Students are not permitted to bring firearms into any Residence nor is the use of firearms allowed on University property.

2.13 LANGUAGE POLICY

The language of instruction at McGill is english, this includes lectures, laboratory instructions and oral presentations in seminar and project courses. Students may present any written material and examinations in french. However, competance in english is essential for success and it is recommended that students who lack fluency in english take course 348-122A,B *English as a Second Language,* which is offered in the Faculty of Agriculture or the *Summer Course English* 128-150C offered on the Montreal Campus.

3 SCHOLARSHIPS, AWARDS, PRIZES ETC.

3.1 GENERAL

Students registered in the Faculty of Agriculture and the School of Food Science are eligible for entrance scholarships and other scholarships, prizes, bursaries and loans which are open to all students at McGill University. These awards are described in the *Undergraduate Scholarships and Awards Announcement* obtainable from the Registrar's Office, McGill University, 845 Sherbrooke St. West, Montreal, PQ, H3A 2T5, or the Registrar's Office, Macdonald Campus of McGill University, Ste. Anne de Bellevue, PQ, H9X 1C0. In addition, loans and special awards are available to students registered in Agriculture and Food Science.

3.2 DEGREE PROGRAMS

3.2.1 Scholarships and Awards

3.2.1.1 CANADIANS AND PERMANENT RESIDENTS

A scholarship is granted for distinguished academic standing. In addition to Entrance Scholarships open to all students at McGill University (see *Undergraduate Scholarships and Awards Announcement),* the following scholarships are open to students in the Faculty of Agriculture and the School of Food Science.

MACDONALD BRANCH OF THE McGILL GRADUATES SOCIETY ENTRANCE SCHOLARSHIPS. – Five scholarships of $1000 each will be available to students entering Bachelor's degree programs inthe Faculty of Agriculture and in the School of Food Science. Applicants will be considered on their own merit taking into account all or any of the following: academic achievement, participation in athletics, student affairs activities or community service projects. Applications must be submitted prior to May 1 each year.

FACULTY SCHOLARS. – The University Scholarships Committee will name students in any undergraduate faculty as Faculty Scholars for exceptionally distinguished work in the University examinations.

ELLIN BEIT-SPEYER SCHOLARSHIP. – One or more scholarships from a fund established by Miss Ellin Beit-Speyer of Springmont Farm, Massawippi, Québec, to be awarded to students enrolled in the second year of the degree program or the first year of the diploma program, who have high academic standing and show a keen interest in dairying or a dairy-related subject. Preference will be given to students from the Eastern Townships in Québec.

HOLLIS J.M. FISKE SCHOLARSHIPS. – Established by a bequest of the late Mrs. Sarah Jane Fiske in memory of her husband who was a graduate of Macdonald College. The scholarships are in the amount of the yearly income. Awarded for outstanding academic achievement to students in the first or second years of the B.Sc.(Agr.) program. Preference is given to Canadians.

RALSTON PURINA SCHOLARSHIP. — A scholarship to be awarded to a student in the Agricultural Engineering, Animal Science or Food Science options entering the senior year. In selecting the winning student, consideration will be given to high academic standing, a record demonstrating good citizenship, sincerity of purpose in agriculture as the chosen field and demonstrated financial need.

HUBBARD FARMS SCHOLARSHIP – An annual award for a worthy undergraduate showing sincerity of purpose in any area of poultry science. If there is no suitable undergraduate candidate, the award will be given to a deserving graduate student working in poultry science.

ELIZA M. JONES AWARDS IN AGRICULTURE AND FOOD SCIENCE – Established by a bequest of the late F.P. Jones in memory of his mother. Two awards to students entering from Nova Scotia Agricultural College, one or two awards to students entering in January from CEGEP or the equivalent, one for Agriculture and one for Food Science. The remainder of the money available each year will be given as awards to high ranking students in any year of their studies, including the Macdonald and Stewart Medal winners.

J.W. McCONNELL AWARDS IN SCIENCE AND ENGINEERING – Value $500. Made possible through the generous donation of the late J.W. McConnell. Awarded to students with outstanding merit from anywhere in Canada proceeding to degrees in any field of Science and Engineering and renewable each year provided academic standing satisfactory to the University Scholarships Committee is maintained. Candidates must be Canadian citizens or landed immigrants with one year's residence in Canada at the time of registration. Candidates with financial need may receive up to a total of full tuition fees plus the cost of board, residence and books. Students inneed should complete an Application for Financial Aid which can be obtained from the Student Aid Office.

JAMES McGILL AWARDS – Value $500. Awarded to students with outstanding merit from anywhere in Canada proceeding to degrees in any faculty. Renewable each year provided academic standing satisfactory to the University Scholarships Committee is maintained. Candidates with financial need may receive up to a total of full tuition fees plus the cost of board, residence and books. Students in need should complete an Application for Financial Aid which can be obtained from the Student Aid Office.

STEWART BROWN AWARDS – $700 each to high ranking students in any year of their Bachelor's degree studies in The Faculty of Agriculture.

3.2.1.2 OVERSEAS STUDENTS

Non-Canadian students are ineligible for entrance scholarships. Overseas students and non-Canadians from North America are expected to present evidence to immigration authorities that they have adequate funds for their studies in Canada. After completing one year of study at the University, students are eligible for scholarships awarded annually on the results of the sessional examinations.

COMMONWEALTH AND COLOMBO PLAN SCHOLARSHIPS. – These are rarely available for undergraduate studies, but undergraduates from countries where higher educational facilities are inadequate in their chosen area of study should inquire at their national departments of education.

FOREIGN GOVERNMENT SCHOLARSHIPS. – Several non-Canadian Governments have regional or federal government plans for sending selected students to study in Canada.

3.2.2 Bursaries

A bursary is a financial award which does not have to be repaid. It is made, on the basis of

need, to a student whose academic achievement makes him worthy of support. Bursaries are not awarded to students with G.P.A. of less than 2.4 in their previous year's work. In addition to bursaries open to all students at McGill University, the following bursaries are open to Faculty of Agriculture and School of Food Science students. Apply to the Registrar's Office, Macdonald Campus, before September 15th, if you think you might be eligible for bursaries marked with an asterisk.*

*ALUMNI BURSARIES. – Two bursaries ($200 each) offered by the Macdonald branch of the McGill Graduates' Society, one for a student in the B.Sc.(Agr.) program and one for a student in the B.Sc.(F.Sc.) program at the First or Second year levels.

ANNETTE S. HILL MEMORIAL BURSARIES. – Established in 1962 to assist young men of the Protestant faith and of good character from the Maritime Provinces or the Province of Ontario to obtain a college education. Apply to the McGill Student Aid Office or to the Registrar, Macdonald Campus.

*BETA SIGMA PHI BURSARY. – A bursary of $500, to be awarded annually for three years, commencing in 1975 to a student in the School of Food Science who has satisfactorily completed First or Second year and is in need of financial assistance to continue in the program.

THE STEWART BROWN BURSARIES. – To be awarded to worthy students who are applying for admission or who are already in course in the Diploma or Degree programs in the Faculty of Agriculture. The bursaries are restricted to Canadian and landed immigrant students. The value of the bursaries will depend on financial need.

CHILDREN OF WAR DEAD (EDUCATION ASSISTANCE) ACT. – Under this Act fees and monthly allowances are provided for children of veterans whose death was attributable to military service. Inquiries should be directed to the nearest District Office of the Department of Veterans Affairs.

ROSS PRESTON BURSARY – $700 provided by Champlain Industries Limited, awarded annually, to a Canadian student of good academic standing who requires financial assistance, who has completed one or more years in the Food Science or Agricultural Chemistry Majors and who has demonstrated interest in proceeding to a career in the food industry.

RALPH VAN HORN BURSARY – $700 provided by Champlain Industries Limited, awarded annually, to a Canadian student of good academic standing who requires financial assistance, who has completed one or more years in the Food Science or Agricultural Chemistry Majors and who has demonstrated interest in proceeding to a career in the food industry.

JARDINE BURSARY – Available to students in academic programs in the Faculty of Agriculture. Open to Canadians and students from other countries. The amount of the bursary will depend on the financial need of the individual student.

*MARCIA L. GAIRDNER BURSARY. – A Bursary of $200 value established in memory of Marcia L. Gairdner (nee Millard), B.Sc.(H.Ec.) 1968, by her parents and her brother, awarded annually to a student in need of financial assistance, in the second year of B.Sc.(F.Sc.) program. Preference will be given but not necessarily restricted to a candidate who attended either Ridgemont or Rideau High School in Ottawa.

*STE. ANNE DE BELLEVUE WOMEN'S UNIVERSITY CLUB BURSARY. – A Bursary of $400. is donated by the Ste. Anne de Bellevue Women's University Club to a woman student in any year of any program in the Faculty of Agriculture or the School of Food Science who is in good standing academically and needs financial assistance.

*JANET MORRISON ROBB BURSARY FOR WOMEN. – The income for one year from an endowment established by the late Hon. James A. Robb, formerly M.P. for Chateauguay-Huntingdon and Minister of Finance, Canada, in memory of his daughter, Janet Morrison Robb, wife of Hugh Harvie Donald.

Preference is given to women students resident in either of the counties of Chateauguay, Huntingdon, or Beauharnois, who are daughters of widows or widowers of limited or moderate means, or daughters of disabled Canadian soldiers who have seen active service.

FISHER TRUST FUND. – In the memory of the late Hon. Sydney A. Fisher, formerly M.P. for Brome County and Minister of Agriculture, Canada, Two grants, normally of $150 each, awarded to students in either the degree or the diploma programs in Agriculture. Under certain conditions, consideration will also be given to applicants in the School of Food Science. Available only to candidates whose parents and guardians have been domiciled in Brome County for at least twelve months prior to the registration date of the study year for which financial assistance is requested. These awards will be continued from term to term only upon favourable report from the Dean of the Faculty of Agriculture or the Director of the School of Food Science.

Application forms may be obtained from Mr. Stanley Quilliams, Secretary, Fisher Trust Fund Trustees, Foster, PQ. Completed application forms should reach him by September 1.

KETCHUM BURSARY. – $250, offered by the Ketchum Manufacturing Sales Company Limited of Ottawa to a worthy student entering the last or second to last year of the degree program in Animal Science. Consideration is given to the applicants' need for assistance.

THE WILLIAM ROWLES BURSARY. – $300 each year from a fund set up in honour of Professor Emeritus William Rowles, who was for many years an outstanding teacher of physics and mathematics in the Faculty of Agriculture. To be given to a student in good academic standing who has financial need.

*THE COLONIZATION SOCIETY'S REGIONAL BURSARIES. – Available to graduates from the following schools: Gaspesia, New Carlisle; Alexander Galt, Lennoxville; Massey-Vanier, Cowansville; Chateauguay Valley, Ormstown; Richmond, Richmond; Pontiac, Shawville; Philemon Wright, Hull; Laurentian, Lachute.

These bursaries are open to students who register in either the degree course or the diploma course in Agriculture. Preference will be given to students from farm families. Apply to the Registrar, Macdonald College, by September 1.

CANADIAN INSTITUTE OF FOOD SCIENCE AND TECHNOLOGY PRIZE. – Two awards, one to a student entering the second year of the B.Sc.(F.Sc.) program and one to a student entering the final year. Awarded for high academic standing to students who demonstrate interest in proceeding to a career in Food Science.

THE MARCEL GRAVEL AWARD. – $500 awarded annually by Empire Dehydrated Products Limited to a Canadian student who has completed the Second Year in the Agricultural Chemistry Major. Consideration will be given to students with high academic standing who have indicated a keen interest in subjects related to the chemistry of food stuffs and who have participated in student activities.

3.2.3 Medals, Prizes and Awards

3.2.3.1 B.Sc.(F.Sc.) PROGRAM

Medals

STEWART MEDALS. – Named in recognition of the long and continued support and interest of the late Mr. and Mrs. Walter M. Stewart in the academic progress and welfare of Macdonald students, and awarded for academic achievement to the students ranking highest in the First and Second years of the B.Sc.(F.Sc.) program.

GOVERNOR GENERAL'S MEDAL. — His Excellency the Governor General of Canada donates a medal to be awarded to the student in Food Science who ranks highest in the graduating class.

Prizes

MARGARET A. MILTON MEMORIAL PRIZE. – A prize of $100 established in memory of Margaret Ann Milton, B.Sc.(H.Ec.) 1965, awarded annually to a student in the Second year of the B.Sc.(F.Sc.) program, based on the results of the final examinations.

NORAH E. HOLCOMB MEMORIAL PRIZE. – An award of $100 given in memory of Mrs. Norah E. Holcomb, former Supervisor of Home Economics in the Protestant School Board of Greater Montreal. To be awarded annually to a Canadian student who has achieved academic success and is enrolled in the 3rd year of the 3-year program on the McGill campus, leading to a B.Ed. degree in Home Economics.

MRS. ALFRED WATT MEMORIAL PRIZE. – Value $100, established by the Québec Women's Institutes as a memorial to a distinguished Canadian, Mrs. Alfred Watt, M.B.E., who introduced the idea of Women's Institutes in England and Wales and was President of the Associated Country Women of the World from 1930 to 1947. Awarded to a student from rural Québec in the First or Second year of the B.Sc.(F.Sc.) program who shows qualities of leadership and is worthy of financial encouragement to complete her program.

FREDERICA CAMPBELL MACFARLANE PRIZE. – $100, donated by the Québec Women's Institute in memory of the late Frederica Campbell Macfarlane, graduate in Institution Administration, 1912, Superintendent of the Québec Women's Institute from 1913 to 1919. Open only to students from a rural district of the Province of Québec, and awarded on the results of the final examinations in any year of the B.Sc.(F.Sc.) program.

HARRISON PRIZE. – A prize established by an endowment under the will of the late Dr. F.C. Harrison, Principal of Macdonald College from 1910 until 1926; awarded for academic excellence to a student in the graduating year of the B.Sc.(F.Sc.) program.

CLASS OF 1953 BOOK PRIZE. – Graduates of the class of 1953 (Agriculture and Food Science) have established a fund, the proceeds of which are used to provide a prize in books for the student with the highest standing in all the courses of the second year curriculum in the B.Sc.(F.Sc.) program.

GOODHOST FOUNDATION AWARD. – Value $300. Provided by Goodhost Foods Limited. Awarded annually to a student for outstanding achievement in food service administration. A plaque accompanies the award.

MEAD JOHNSON CANADA AWARD IN DIETETICS. - A scholarship in the amount of $1,000 awarded each year to a student entering the final *Stage* of the dietetics program. The selection of the recipients will be based on academic achievement, a high level of performance in the previous phases of the *Stage* program and the potential contribution to the profession of dietetics.

QUÉBEC HOME ECONOMICS ASSOCIATION BURSARY/BOURSE DE L'ASSOCIATION DES CONSEILLÈRES EN ÉCONOMIE FAMILIALE DU QUÉBEC. - A bursary of $150 to be awarded to a Canadian student in Home Economics Education or Consumer Studies, who has achieved high academic standing, and is in financial need.

3.2.3.2 B.Sc.(Agr.) PROGRAM

Medals

MACDONALD MEDALS. - As a tribute to Sir William Macdonald, and in recognition of academic achievement, the late Mr. and Mrs. Walter M. Stewart of Montreal established two medals for annual competition, to be awarded to the students with the highest aggregate standing in the First and Second years respectively of the B.Sc.(Agr.) program.

GOVERNOR GENERAL'S MEDAL. - His Excellency the Governor General of Canada donates a medal to be awarded to the student in Agriculture who ranks highest in the graduating class.

CHEMICAL INSTITUTE OF CANADA PRIZE. - A medal and a prize of $25 for the student in the Chemistry option with the highest standing at the end of the Second year.

EMILE A. LODS MEMORIAL PRIZE. — A prize in the amount of the annual income of an endowment given in memory of Emile A. Lods, M.S.A., D.Sc., F.A.I.C., and awarded to a student in the Second year of the university program majoring in Agronomy.

LOCHHEAD MEMORIAL PRIZE. - A prize established by an endowment in memory of William Lochhead, B.A., M.Sc., the first Professor of Biology at Macdonald College. it is awarded to a student whose major interest is in entomology and directly related courses in the undergraduate program. If there is no suitable candidate, the Chairman of the Department of Entomology may recommend a graduate student for this prize. The prize, in value equal to the revenue from the endowment, is to be in books, selected by the winner.

CLASS OF 1953 BOOK PRIZE. - Graduates of the class of 1953 (Agriculture and Food Science) have established a fund, the proceeds of which are used to provide a prize in books for the student with the highest standing in all the courses of the second year curriculum in the B.Sc.(Agr.) program.

ROBERT HADDON COMMON PRIZE - A prize of $300 awarded annually to the student achieving the highest aggregate average in his or her final year in the Agricultural Chemistry Major.

CUTLER SHIELD. - The late Professor Garnet H. Cutler, the first lecturer in Cereal Husbandry, Macdonald College, donated a bronze challenge shield which is held for one year by the student major in Agronomy with the highest aggregate in the final year.

CANADIAN SOCIETY OF ANIMAL SCIENCE BOOK PRIZE. - A warded to a student entering the final year who has achieved academic excellence, in Animal Science, Nutrition or Food Science in the penultimate year.

RAYMOND L. CONKLIN PRIZE - A prize in the amount of the yearly income from an endowment established by Raymond L. Conklin, D.V.M. To be awarded to a student who has completed the First or Second years who has achieved high academic standing.

THE RICHARD LEVESQUE MEMORIAL PRIZE. - Value $250, to be awarded to a student entering his final undergraduate year of a B.Sc.(Agr.) program. To qualify, students should have high academic standing and preference is given to a student who is active in the campus sports program and participates in student organizations.

MODERN DRAINAGE SYSTEM INC. PRIZE IN AGRICULTURAL ENGINEERING. - A prize of $500 awarded each year to a student who registers in the second last or last year of the Agricultural Engineering Major. In selecting the winning student, consideration will be given to high academic standing, participation in extra-curricular activities, and interest in the agricultural drainage or agricultural machinery industries.

JEFF MILLS MEMORIAL PRIZE. - Value $250, awarded to a deserving student entering 2nd or 3rd Year inthe Faculty of Agriculture. Jeff Mills was killed tragically at the age of 25. He was an outstanding athlete and student at the Macdonald Campus. He had a multitude of friends

who respected his individuality and capability of accomplishment by concentrated effort. The Prize will be given to a student possessing similar characteristics.

LYNDEN LAIRD LYSTER MEMORIAL AWARDS IN PARASITOLOGY. – A Scholarship/Bursary award is available to an undergraduate student for excellence in Parasitology. Apply to the Director of the Institute of Parasitology.

GRAY PRIZE IN MICROBIOLOGY. – A Book Prize, in honour of Prof. P.H.H. Gray, longtime chairman of the Department of Microbiology, to be awarded annually to the student majoring in Microbiology who has demonstrated academic excellence and the most promise in the graduating year.

HARRISON PRIZE IN MICROBIOLOGY. – A Book Prize, in honour of Principal F.C. Harrison, first Chairman of the Department of Microbiology, to be awarded annually to the student majoring in Microbiology who has demonstrated academic excellence and the most promise in the second year.

GUY PROULX MEMORIAL PRIZE – Value $100 to be awarded to a student entering the final year in a Bachelor's degree program in the Faculty of Agriculture. Guy Proulx died following a tragic car accident at the age of 23. He was a good student, athlete and participant in student affairs. The prize will be given to a student having similar characteristics.

GENSTAR CHEMICAL LIMITED AWARD of $350 is offered annually to the student who has attained the highest aggregate standing in the penultimate year of the B.Sc.(Agr.) program in Soil Science.

ATLANTIC PROVINCES HATCHERY FEDERATION AWARD – $300 each year to a student, from the Atlantic Provinces in the final or penultimate year of a Bachelor's degree program at the Macdonald campus. Awarded, on the basis of the student's performance in a poultry course, by the Faculty of Agriculture Scholarships Committee on the recommendation of the Department of Animal Science.

3.2.4 Loans – General Information

A loan is a form of financial aid to supplement a student's resources (where earning potential justifies the prospect of reasonably early repayment). An academic record of a least a C average (G.P.A. of 2.0) is required as a condition of eligibility. In general, loans are available only to Canadian students or students with landed immigrant status, and as a general rule not to freshmen students.

Students applying for loans from funds available at the university are required first to apply for Government aid through their home province and otherwise demonstrate that they have exhausted all their possible sources of help, e.g. family, etc.

Students who have financial problems and are unable to pay the full amount of fees due at registration and who are not assured of sufficient funds to pay the second instalment due in January should apply for loan assistance before registration, in order to assure themselves of funds to complete the year. In any case loan applications in the Faculty of Agriculture must be made before September 30, to the Registrar's Office. Applications made after this date will not be considered, except in cases of emergency.

The Registrar's Office will supply application forms for loans from Québec or Ontario governments, to students who did not apply directly before registration. Application forms should be completed by the students, with requested documentation attached, and handed back to the Registrar's Office. "Institution Section" will be completed and sealed by the Registrar's Office and the document mailed directly to the appropriate government office.

LOAN FUND OF THE MACDONALD BRANCH OF THE McGILL GRADUATES' SOCIETY. – Through the generosity of graduates, loan funds have been made available for deserving students. Students who have a G.P.A. of at least 2.4 in their previous year's work will be eligible for loans of up to $500 per year.

The Graduates' Society Loan Funds bear interest at the rate of 4½%, and are limited to Canadian citizens. Applications are to be made to the Registrar's Office.

KIWANIS CLUB OF MONTREAL STUDENT LOAN FUND. – An interest-bearing loan fund for students in Agriculture established to assist worthy students who are in need of financial help to further their education. Open to students contemplating entering the Faculty as well as by students already enrolled. The loans are to be repaid, in whole or by instalments, as soon as the recipient is able to do so. Except in special cases the maximum loan is $500. Application for a Kiwanis Club loan is to be made to the Registrar's Office, Macdonal Campus.

3.3 DIPLOMA PROGRAM

3.3.1 Bursaries

QUEBEC WOMEN'S INSTITUTE PRIZE. – $100 for the student entering the Second year of the

Diploma Program, who: (1) is a professional farmer's son (or daughter) from the Province of Québec, (2) has spent at least one season(seed time to harvest) in his or her father's employ on the farm, (3) intends to return to his or her father's farm for at least one year on completion of the course or to manage his or her own farm, (4) and who, if more than one candidate meets the above three requirements, takes the highest proficiency in agricultural subjects in the First or, if he or she is the only candidate, obtains at least Class II standing in these subjects.

If no student can qualify for the above, this bursary will be made available as an entrance bursary to the First year of the Diploma program.

FISHER TRUST FUND and THE COLONIZATION SOCIETIES REGIONAL BURSARIES, described in the section for degree programs, are also applicable to Diploma students.

3.3.2 Medals

MINISTER OF AGRICULTURE OF QUEBEC MEALS. - The Honourable Minister of Agriculture for the Province of Québec offers annually a gold and a silver medal to the Diploma in Agriculture students ranking first and second respectively in the graduating class.

3.3.3 Prizes

THE RALSTON-PURINA DIPLOMA PROJECT PRIZE. - A prize of $50 is given annually by Ralston-Purina of Canada Limited for the best project submitted by a student registered in the Diploma Project Course.

3.4 GRADUATE SCHOLARSHIPS AND FELLOWSHIPS

Financial assistance is available for graduate students in the form of fellowships, teaching and research assistantships. Application should be made to the Fellowships Office of the Faculty of Graduate Studies and Research, McGill University, on forms obtainable from that Office. The deadline for Fellowships and Scholarships is February 1.

Graduate students should refer to the *Postgraduate Fellowships, Bursaries and Prizes Announcement,* available from the Registrar's Office, McGill University, or from the Registrar, Macdonald Campus.

THE WALTER M. STEWART AWARDS IN AGRICULTURE. - Awards totaling $4,000 from a fund established by the late Walter M. Stewart. To be awarded annually to students studying at the postgraduate level at Macdonald Campus. Preference will be given to graduates from Québec Universities. If there are no suitable candidates at the postgraduate level in a particular year the $4,000 will be awarded to undergraduate students in the Faculty of Agriculture who have achieved high academic standing.

DEPARTMENT OF EDUCATION POST-GRADUATE SCHOLARSHIPS. - Scholarships for predoctoral (postgraduate) studies and for work leading to higher degrees in artistic, scientific or technical training are awarded for one year at a time to residents in the Province of Québec. The number of scholarships is determined by a jury. Candidates wishing to take part must obtain the application form from: Direction générale de l'enseignement supérieur, Ministère de l'Éducation, 1035 rue de la Chevrotière, Québec, P.Q. G1R 5A5.

THE SIR VINCENT MEREDITH FELLOWSHIP IN AGRICULTURAL ECONOMICS. - The Fellowship valued at $2,500 per year is tenable for a two-year period. The fellow must qualify for admission to graduate work in Economics at the Ph.D. level as set out in the Announcement of the Faculty of Graduate Studies and Research of McGill University, and will be required to pursue research or thesis work on an approved subject in the area of Agricultural Economics. Limited teaching or other duties attach to the tenure of this Fellowship. Inquiries and applications should be addressed to the Department of Agricultural Economics, prior to March 15.

LYNDEN LAIRD LYSTER MEMORIAL AWARD In PARASITOLOGY. - Awards to outstanding post-graduate students in Parasitology. Apply to the Director of the Institute of Parasitology.

OTHER GRADUATE FELLOWSHIPS. - A number of Graduate Fellowships are available to students entering the Faculty of Graduate Studies and Research. Further particulars may be obtained from the Fellowships Office of the Faculty of Graduate Studies and Research, McGill University.

4 ACADEMIC PROGRAMS & CURRICULUM

4.1 PROGRAMS

The programs in the Faculty of Agriculture and the School of Food Science are normally of three years' duration following the completion of a 2 year post-secondary Collegial program (CEGEP) in the Pure and Applied Sciences or the Health Sciences or its equivalent.

PROGRAMS IN AGRICULTURE

Bachelor of Science in Agriculture (B.Sc.(Agr.))

A three-year program from the Diploma of Collegial Studies leading to professional qualifica-

tion in Agricultural Science or in one of its related specialized branches in the Biological Sciences and Renewable Resources.

Bachelor of Science in Agricultural Engineering (B.Sc.(Agr.Eng.))

A three-year program from the Diploma of Collegial Studies in Pure and Applied Sciences leading to professional qualifications in Agricultural Engineering.

Diploma in Agriculture

A two-year program in practical agriculture designed to prepare students for careers in farming or work closely associated with agriculture at the production level.

Postgraduate Programs in Agricultural Science

These lead to the degrees of Master of Science and Doctor of Philosophy, with study and research in one or more of the departments of the Faculty or the School of Food Science. The program of studies and examinations are controlled by the Faculty of Graduate Studies and Research.

PROGRAMS IN FOOD SCIENCE

Bachelor of Science in Food Science (B.Sc.(F.Sc.))

A three-year program from the Diploma of Collegial Studies leading to the professional qualifications necessary for Dietetics and Food Science, as well as the following disciplines inthe Food and Consumer Sciences area: (Including Food Chemistry orientation) Nutrition, Food Services Administration; Food Administration; Home Economics Education; and Consumer Services.

NOTE 1. Students with a CEGEP diploma in Social Sciences with Chemistry, Pure and Applied or Health Sciences may enter the Home Economics Education Program which qualifies for the B.Ed. degree majoring in Home Economics.

NOTE 2. Students wishing to enter the Food Services Administration program which qualifies them for the B.Com. degree must meet the requirements for entry into the Faculty of Management. Elective courses in Chemistry and Biology are highly recommended.

4.2 GENERAL ENTRANCE REQUIREMENTS

Recognized CEGEP programs for admission are:

Entrance Requirements for CEGEP Students*

1. B.Sc.(Agr.) Diploma of Collegial Studies (D.E.C.) including: Biology 301; Chemistry 101, 201; Mathematics 103, 203; Physics 101, 201, 301.

2. B.Sc.(Agr.Eng.) Diploma of Collegial Studies (D.E.C.) including: Biology 301; Chemistry 101, 201; Mathematics 103, 105, 203; Physics 101, 201, 301;

3. B.Sc.(F.Sc.) Diploma of Collegial Studies (D.E.C.) including: Biology 301, 401; Chemistry 101, 201, 202; Mathematics 103, 203; Physics 101, 201, 301;

4. B.Ed. (Home Economics) Diploma of Collegial Studies (D.E.C.) in Sciences or in Social Sciences.

*Courses underlined are required for B.Sc.(Agr.Eng.) or B.Sc.(F.Sc.). They are in addition to the core of courses required by all programs, except Home Economics.

Students in other Canadian provinces (except Ontario) require one year of university study, including courses in biology, chemistry, mathematics and physics. Ontario Grade 13 students may be considered for a four year (120 credit) program; some credit may be granted for appropriate courses taken in Grade 13.

All candidates for admission must furnish medical certificates of physical health on forms supplied by the College.

Applications for admission from Canadian students should be received before June 1st (for September registration) or November 1st (for January registration) of the academic year in which they are to be considered for acceptance and must be accompanied by a non-refundable fee of $15.00 in Canadian funds payable by certified cheque or money order to Macdonald College.

NON-CANADIAN STUDENTS

Foreign students with higher than average marks are admissible if they have successfully completed "A" Level examinations in Chemistry, Physics and Mathematics with a grade of "C" or better and five "O" Level passes including one Biology and one English. Equivalents of the above can also be considered for admission.

Applications for admission from students whose homes are outside Canada must be received before March 1st (for September registration) and August 1st (for January registration) of any year if they are to be considered for acceptance for that academic year and must also be accompanied by the application fee of $15.00. No decision on these applications will be made by the Committee on Admissions before March 1 (August 1st) and the applicants will be notified whether or not their applications are accepted as soon after that date as possible.

Non-Canadian students and students who are not permanent residents must first obtain a student visa from a Canadian Embassy or Consulate in their area. While it is not possible to obtain a

student visa until both a letter of acceptance from the university and a certificate of acceptance from the Québec government have been issued, students are advised to begin the procedures necessary to secure assurance of admission to Canada and to complete the necessary medical papers for the Canadian Immigration authorities *as soon as possible after submitting an application for admission to the University.* If offered admission, both a copy of the letter of acceptance from the university and the certificate of acceptance from the Québec government must be submitted to the Immigration Authorities to complete the processing of the visa application. Student visas can be renewed annually in Canada subsequent to the student's registration.

A pamphlet which describes Canadian immigration regulations in detail and which contains notes and guidance for students from other countries, is available from all Canadian Embassies, Consular Offices and Immigration Offices overseas.

CLASSES OF STUDENTS

Full-Time Students

Full-time students in Satisfactory standing take a minimum of 12 credits per term.

Full-time students in Probationary standing are advised to take not more than 12 credits per term, and may add to this load a course in which a grade of "D" was originally obtained.

Part-time Students

Part-time students carry fewer than 12 credits per term. New students apply through the Registrar's Office and the applicant must have the qualifications to enter a full-time program. Full-time students who wish to become part-time must consult the Office of the Associate Dean. Certain programs must be completed within a specified number of years; such information is available from the Associate Dean.

Special Students

A Special student takes regular credit courses, but is not working towards a degree. To qualify for this status a student must hold a recognized diploma and have a specific approved plan of study. Applications must be made annually at the Office of the Associate Dean.

Visiting Students

A visiting student is one who is taking courses at McGill for credit at another university. Applications must be made at the Office of the Associate Dean.

4.3 ACADEMIC STANDING – B.Sc.(Agr.), B.Sc.(Agr.Eng.) and B.Sc.(F.Sc.)

All students are required to give satisfactory evidence of mastery of the material of lecture and laboratory. Examinations are normally held at the end of each course but other methods of evaluation may also be used. The grade assigned for a course represents the standing of the student in all the work of the course.

Examinations and papers may be written in either of the two official languages of Canada.

Upon payment of a fee of $10.00 a student may apply to the office of the Dean of the Faculty to have an examination re-read.

CREDIT SYSTEM

All courses carry a credit value. In general, one credit indicates about three hours of assigned time (lectures, laboratory periods, assignments) per week for one term. Courses are graded by letter. Letter grades are given grade point weights as follows (percentage ranges are given in parenthesis): A, 4.0 (85-100); A−, 3.7 (80-84); B+, 3.3 (75-79); B, 3.0 (70-74); B−, 2.7 (65-69); C+, 2.3 (60-64); C, 2.0 (55-59); D, 1.0 (50-54); F, 0 (0-49).

The grade points for each course are calculated by multiplying the credit value of the course by the student's earned grade rating. Standing in each term will be determined on the basis of a grade point average (GPA) computed by dividing the sum of the grade points earned for the term by the total course credits attempted.

The cumulative grade point average (CGPA) will be the grade point average calculated using the student's entire record in a degree program. A failed course will continue to be used in the calculation of the CGPA even after the course is repeated and passed, or if a supplemental examination is taken.

ACADEMIC CREDIT TRANSFER

Transfer of credits based on courses taken at other institutions before entrance to this Faculty is made by the Admissions Committee prior to entrance.

Transfer of credits may be made for work at other educational institutions during a student's attendance at McGill University. Permission to apply such credits to a McGill program must be secured by the student from the Academic Adviser of their program before the work is undertaken (forms are available in the Registrar's Office). Grades obtained in such courses do not enter into calculations of Grade Point Average in this Faculty.

Exemption from a required course on the basis of work completed at another institution must be

approved by both the Academic Adviser and the instructor of the appropriate McGill course.

Full time students may, with the written permission of the Dean of the Faculty, register for up to 3 credits in each semester at any university in the province of Québec. These courses, successfully completed according to the standards of the university giving the course, will be recognized for the purpose of the degree but the grades obtained will not enter into calculations of GPA in this Faculty. Further details are found in the section entitled "Academic Credit Transfer Agreement" in the *General Announcement*.

GRADUATE COURSES AVAILABLE TO UNDERGRADUATES

Undergraduates wishing to take such courses must have a CGPA of at least 2.5.

STANDING

The program for the degree will normally be completed in 3 academic years or 6 semesters. For the purpose of student classification, the years will be termed U1, U2 and U3.

U1 to be used during the first 12 months following each admission to a degree program in which the student is required to complete 72 or more credits at the time of admission.

U2 to be used for all students who are not U1 or U3.

U3 to be used during the session in which it is expected the student will qualify to graduate.

Students' academic standing is based on the CGPA which is calculated on the courses taken while registered as a full-time or part-time undergraduate in a degree program. If the CGPA drops below 2.00, the student is in academic difficulty.

STUDENTS IN ACADEMIC DIFFICULTY

1. When a student's CGPA (or SGPA in the first term of the program) drops below 2.00, withdrawal is advised. Students who choose to reregister, are on probation until the CGPA is raised to 2.00.
2. Students on probation are advised to register for not more than 12 credits per term. They are not permitted to be on probation for more than one term unless they obtain a SGPA of 2.50 or higher.
3. Students who do not raise their CGPA to 2.00 (or obtain a SGPA of 2.50) while on probation are not permitted to register. They are required to withdraw from the degree program for at least one term. If after this, students wish to be readmitted they must apply in writing to the Committee on Academic Standing.

SUPPLEMENTAL EXAMINATIONS

Students who fail a course may either reregister for and repeat the course, or they may apply to write one supplemental examination and will receive the grade earned. If a student applies to write a supplemental examination and does not write, a mark of "J" will be given unless the Registrar has been informed in writing at least one week in advance that the candidate does not intend to write. In the case of an elective course, the student may substitute another elective. Supplemental privileges or reregistration are available for students who wish to upgrade a course in which a grade of D has been obtained.

Supplemental examinations may be written at the August supplemental period or at the next regular final examination period, i.e. December for first term courses and April for second term courses. In addition, by arrangement with the instructor, an examination may be made available at the end of a term in which there is no regular end of term examination in that course.

N.B. Supplemental examinations will not be available after August 1983.

A student may register only twice in any course.

DEGREE REQUIREMENTS

To be eligible for a degree students must have passed all required courses and also any specified electives recommended by their adviser. They must have accumulated at least 90 credits [B.Sc.(Agr.) and B.Sc.(F.Sc.)], 115 credits for the dietetics program including stages of professional formation, and 106 credits [B.Sc.(Agr.Eng.)], of which at least 45 credits must be taken at McGill University and have a CGPA of at least 2.00.

LANGUAGE REQUIREMENT FOR PROFESSIONS

Québec law now requires that candidates seeking admission to provincially-recognized Québec professional corporations* must possess a working knowledge of the French language, i.e. be able to communicate verbally and in writing in that language.

To demonstrate this capability, candidates will be required to pass an examination set by the Office de la langue française, unless they can show that three years of instruction in a French post-primary school have been completed. The professional corporation will require this proof of attendance or of successful completion of the Office examination.

This examination will test the candidates' mastery of oral and written comprehension and expression in French. The contents may vary in accordance with the current terminological requirements of the profession or professional group.

Examinations take place every three months and may be attempted an unlimited number of times.

The examination may be attempted by registered students during the two years prior to the date they receive a degree giving access to a professional corporation. Arrangements for sitting the exam while still a student must be made through the faculty office. Priority will be given to those closest to graduation.

More information may be obtained from the Office de la langue française, Tour de la Bourse (Place Victoria), 15e étage, Montréal, Québec H4Z 1G8, Telephone 873-8361.

Students who need to acquire a functional level of proficiency in French may register in courses at either the centre for Second Languages (French and English), 3438 McTavish Street, Montreal, H3A 1X9, Telephone 392-5727, for courses during the day, or at the Centre for Continuing Education, 772 Sherbrooke Street West, Montreal, H3A 1G1, Telephone 392-4901, for courses inthe evening.

The Faculty of Agriculture offers the following courses to assist students in acquiring a satisfactory level of proficiency in French: 354-300A,B Technical French, and 354-305A, Agricultural Vocabulary.

Students already proficient in French but who wish to keep up practice may register in courses at the Department of French Language and Literature, 3460 McTavish Street, Montreal, H3A 1X9, Telephone 392-4577, or at the Centre d'études canadiennes-françaises, 3475 Peel Street, Montreal, H3A 1W7, Telephone 392-5200.

* *McGill degrees and diplomas currently give access to corporations regulating the activities of the following professional groups:*

Advocates
Agrologists
Architects
Chartered Accountants
Chartered Administrators
Chemists
Dentists
Dietitians
Engineers
Industrial Administration Accountants
Industrial Relations Counsellors
Licensed General Accountants
Notaries
Nurses
Occupatinal Therapists
Physicians
Physiotherapists
Psychologists
Social Workers
Speech Therapists & Audiologists
Urbanists
Vocational Guidance Counsellors

ACADEMIC ADVISERS

Before registration, all students entering the Faculty must select a major program of study. They must consult with the Academic Adviser of their chosen program for the selection and timetabling of required and elective courses. The Academic adviser will continue to act in this capacity during the whole of the studies in the Faculty.

4.4 ATTENDANCE AND CONDUCT IN CLASSES

Matters of discipline connected with or arising from the general arrangement for teaching are under the jurisdiction of the Dean of the Faculty or Director of the School concerned.

Students may be admonished by a professor or instructor for dishonest or improper conduct or may be reported to the Dean or Director concerned for disciplinary action.

Punctual attendance at all classes, laboratory periods, tests, etc., is expected of all students. Absences can only be excused on the grounds of necessity or illness, of which proof may be required. Special attention is called to the fact that the completion of all laboratory work is obligatory and the opportunity to make up work missed can only be provided in the case of properly excused absences.

The Faculty has the power to refuse examinations to those students who persist in absenting themselves from classes without permission.

Students are requested not to make application for additional leave either before or after holiday periods, as such leaves can only be granted in case of illness or other exceptional circumstances.

4.5 CURRICULA

Curricula for the B.Sc.(Agr.) in Agricultural Sciences

Program leading to professional qualification in agricultural science with specialization in Agricultural Chemistry, Agricultural Economics, Animal Science, Plant Science, Soil Science and General Agricultural Science.

Coordinator: Prof. J.F. Millette.

AGRICULTURAL CHEMISTRY MAJOR

This selection of courses is intended for those who look to careers as chemists in the field of agricultural science and related industries or public service and who wish to qualify for admission to professional organizations for chemists or food technologists. Students are required to take 63 credits in Chemistry, 3 credits in Statistics and 24 credits in electives for specialization in Foods, Biochemistry, Soils or the Environment.

Academic Advisors: Prof. T. Smyrl (Foods), Prof. W.D. Marshall (Environment), Prof. C.G. Zarkadas (Biochemistry), Prof. J.F.G. Millette (Soils).

Required courses, 66 credits

COURSE NUMBER	SUBJECT	CREDITS
332-211A	Biochemistry I	2
332-212A	Biochemistry Laboratory	2
332-213B	Analytical Chemistry I	2
332-214B	Analytical Chemistry Laboratory	2
332-230A	Organic Chemistry I	3
332-231B	Organic Chemistry II	3
332-234B	Biochemistry II	3
332-320A	Colloid Sciences	3
332-333A	Organic Chemistry III	3
332-334A	Analytical Chemistry II	3
332-335B	Analytical Chemistry III	3
332-339A	Introductory Physical Chemistry	3
332-340B	Advanced Physical Chemistry	3
332-434B	Organic Chemistry IV	3
332-451A	Food Analysis I	3
332-452B	Food Analysis II	3
332-490D	Project	5
332-495D	Seminar	2
338-301B	Biothermodynamics	3
338-303A	Advances in Atomic and Nuclear Science	3
332-614A	Protein and Nucleic Acid Chemistry	3
332-615B	Music Biochemistry	3
360-201A,B	Statistical Methods	3

FOOD ORIENTATION

A specialization designed for students interested in chemistry in relation to the analysis and processing of foods and feeds. The chemistry of the basic components of foods and feeds is emphasized: proteins, carbohydrates and fats. Graduates are suited for careers in the food industries and various related industries; they are suited to undertake graduate studies related to the chemistry of biological materials in general.

This orientation does not differ substantially from the Food Chemistry Orientation of Food Science other than in the degree conferred.

Required courses, 66 credits (377-419D and 377-495D may be substituted for 332-490D and 332-495D)

Primary electives: a minimum of 18 credits should be selected (in consultation with the Academic Advisor) from the following list of courses.

COURSE NUMBER	SUBJECT	CREDITS
362-230B	The Microbial World	3
362-442A	Food Microbiology and Sanitation	3
376-340A	Chemistry of Food Products I	3
376-341B	Chemistry of Food Products II	3
376-251B	Food Chemistry	3
342-330A	Fundamentals of Nutrition	3
376-414A	Advanced Food Processing	3
336-325A	Food Engineering I	3
358-444B	Fruit and Vegetable Processing	3

Free electives: to meet the minimum of 90 credits for the degree.

AGRICULTURAL BIOCHEMISTRY ORIENTATION

This specialization deals more particularly with the biochemical and physiological processes associated with plant and animal organisms in relation to the production of foods and feeds (meat, milk, eggs, edible oils, plant proteins, etc.). Graduates are fitted for post-graduate studies in the fields of biological or medical sciences as well as for positions in the meat, dairy, plant products' industries and the public service.

Primary electives: a minimum of 12 credits from the list below in consultation with the Academic Advisor.

COURSE NUMBER	SUBJECT	CREDITS
342-250A	Principles of Animal Science	3
367-211A	Principles of Plant Science	3
356-204A,B	Genetics	3
342-330A	Fundamentals of Nutrition	3
342-223A	Mammalian Physiology	3
346-353B	Plant Physiology	3
342-324A	Animal Reproduction	3
342-312B	Animal Pathology	3
342-424B	Metabolic Endocrinology	3
340-331A	Cereal Crops	3
340-332B	Industrial Crops	3

Free electives: to meet the minimum of 90 credits for the degree.

ENVIRONMENT ORIENTATION

Increases in food production are related to effective control of fungal, insect and other pests and to effective use of fertilizers. Since many pesticides are based on potentially toxic materials the assessment of hazards that may be involved in their continued use becomes a matter of the greatest importance. A detailed knowledge of the chemistry of such materials, their fate and persistence in the environment is, therefore, essential and involves advanced analytical methods in conjunction with field studies.

Primary electives: a minimum of 12 credits from the list below chosen in consultation with the Academic Advisor.

COURSE NUMBER	SUBJECT	CREDITS
362-230B	The Microbial World	3
362-231B	Microbial Ecology	3
356-204A,B	Genetics	3
356-205A,B	Genetics Laboratory	2
375-333A	Physical and Biological Aspects of Pollution	3
338-405B	Tracer Techniques	3
340-434B	Weed Biology and Control	3
350-453B	Economic Entomology II	3

Free electives: to meet the minimum of 90 credits for the degree.

SOIL ORIENTATION

The study of soil chemistry has been fostered by man's interest in plant growth and food production. If the soil is to continue to be both the source of the bulk of our food and the repository for many of our wastes, then it is obviously desirable that we understand its complex chemistry. The chemical composition, ion exchange properties, organic matter and the chemistry of soil pollution will be emphasized. In addition, consideration will be given to the origin and classification of soils and the maintenance of soil fertility. Graduates are well suited for careers in the agricultural chemical industries as well as in research in soil science related to all aspects of agricultural production, pollution and waste disposal.

Primary electives: a minimum of 12 credits from the list below chosen in consultation with the Academic Advisor.

COURSE NUMBER	SUBJECT	CREDITS
372-210A	Principles of Soil Science	3
372-250B	Geology and Geomorphology	3
372-315B	Soil Fertility and Fertilizers	3
372-410B	Soil Chemistry	3
372-420A	Soil Survey	3
338-405B	Tracer Techniques	3

Free electives: to meet the minimum of 90 credits for the degree.

⚠ **PENDING FULL AUTHORIZATION**

AGRICULTURAL ECONOMICS MAJOR

The curriculum constitutes a comprehensive and systematic program in the application of economics and management to problem-solving in the agricultural-food system and related resource systems. The complete package would serve to equip the student for decision making both within the firm and in top management, if not on graduation then after a few years experience. Qualified graduates are in demand at all levels within the private business, and public service sectors of the Canadian economy.

Academic Adviser: Professor G. Coffin

Required courses, 45 credits

COURSE NUMBER	SUBJECT	CREDITS
334-200A	Principles of Economics I	3
334-201B	Principles of Economics II	3
334-231B	Economics of Agriculture	3
334-320A	Economics of Agricultural Production and Prices	3
334-430B	Agriculture, Food and Resource Policy	3
334-435A	Agriculture Economic Research Methods and Special Problems	3
334-442B	Economics of Food Systems Development	3
342-250A	Principles of Animal Science	3
360-201A,B	Statistical Methods I	3
367-211A	Principles of Plant Science	3
372-201A	Principles of Soil Science	3
Two of the following three courses:		
334-230B	Economics of Marketing	3
334-331A	Farm Business Management	3
334-333A	Resource Economics	–
And two of the following three courses:		
334-350B	Agricultural Finance	3
334-440A	Advanced Agriculture and Food Marketing	3
334-450B	Agri-Business Management	3
		45

Elective Courses

"45 credits to be chosen in consultation with Academic Adviser, with emphasis on courses in the agricultural sciences."

ANIMAL SCIENCE MAJOR

The curriculum in Animal Science involves intensive training in both the basic and applied biological sciences as related to domestic animals. Concentration in either Animal Genetics, Nutrition or Physiology is possible within the Animal Science major. Graduates are professionally qualified and generally enter agricultural industries, mainly sales and marketing, government service (Provincial or Federal), extension, teaching or post-graduate studies. Students in the Animal Science major may apply for entrance to the pre-veterinary semester at the Ontario Veterinary College. Students are strongly advised to obtain at least 3 months practical experience on a commercial livestock farm before graduation.

Academic Advisers: Professor S.P. Touchburn (U-3), Professor L.E. Phillip (U-2).

Required courses, 72 credits

COURSE NUMBER	SUBJECT	CREDITS
332-211A	Biochemistry I	2
332-212A	Biochemistry laboratory	2
332-234B	Biochemistry II	3
342-250A	Principles of Animal Science	3
342-301B	Principles of Animal Breeding	3
342-312B	Animal Pathology	3
342-323A	Mammalian Physiology	4
342-324A	Animal Reproduction	3
342-330A	Fundamentals of Nutrition	3
342-433B	Animal Nutrition	3
342-450A	Dairy Cattle Production	3
342-452B	Beef Cattle and Sheep Production	3
342-454B	Swine Production	3
342-456A	Poultry Production	3
342-495D	Seminar	2
344-202B	Cellular Biology	3
356-204A,B	Genetics	3
356-205A,B	Genetics laboratory	2
360-201A,B	Statistical Methods I	3
362-230B	The Microbial World	3
367-211A	Principles of Plant Science	3
372-210A	Principles of Soil Science	3
	Two Economics Courses	6
376-340A	Chemistry of Food Products I	3
		72

Elective courses: 18 credits selected in consultation with Academic Adviser.

GENERAL AGRICULTURAL SCIENCES MAJOR

The curriculum is designed to provide a general scientific and applied background for modern agriculture without the requirements of a specialized program and to develop an appreciation of applied agriculture in its on-farm environment. Graduates may be employed in agri-business, agricultural extension and communications, sales and marketing, teaching or farm management.

Academic Advisers: Prof. E.R. Norris (U2), Mr. E.J. Gârino (U3).

Required courses, 44 credits

COURSE NUMBER	SUBJECT	CREDITS
330-495D	Seminar and Assignment	2
332-211A	Biochemistry I	2
334-200A	Principles of Economics	3
334-331A	Farm Business Management	3
342-323A	Mammalian Physiology	
	or	
346-353B	Plant Physiology	4
342-250A	Principles of Animal Science	3
344-202B	Cellular Biology	3
352-300B	Communications – Extension Methods	3
356-204A,B	Genetics	3
360-201A,B	Statistical Methods I	3
362-230B	The Microbial World	3
367-211A	Principles of Plant Science	3
372-210A	Principles of Soil Science	3
One production course in Animal Science		3
One production course in Plant Science		3
		44

Primary Electives: A minimum of 21 credits from the list below chosen in consultation with the Academic Adviser

334-230B	Economics of Marketing	3
334-231B	Economics of Agriculture	3
336-215B	Principles of Hydrology	3
336-412A	Agricultural Machinery	3
338-201A	Introductory Meteorology	3
340-331A	Cereal Crops	3
340-333A	Forage Crops	3
340-439B	Field Management	3
342-301B	Principles of Animal Breeding	3
342-450A	Dairy Cattle Production	3
342-452B	Beef Cattle & Sheep Production	3
342-454B	Swine Production	3
342-456A	Poultry Production	3
358-432A	Vegetable Production I	3
358-443A	Storage and Handling of Horticultural Crops	3
366-402A	General Plant Pathology	3
372-315B	Soil Fertility and Fertilizers	3
372-321A	Principles of Soil Rating	3
372-410B	Soil Chemistry	3

Free Electives: (25 credits) Chosen in consultation with Academic Adviser

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PLANT SCIENCE MAJOR

The curriculum in the Plant Science Major involves intensive training in both the basic and applied biological sciences as related to plant science. Concentration in either agronomy, horticulture or plant protection is possible. Graduates are professionally qualified and generally enter agricultural industries, Provincial or Federal Government services, extension, teaching or post-graduate studies.

Academic Adviser: Professor C. Chong (U1), Professor K. Stewart (U3), Professor D. Buszard (U2).

Required courses, 52 credits

COURSE NUMBER	SUBJECT	CREDITS
332-211A	Biochemistry I	2
332-212A	Biochemistry laboratory	2
334-231B	Economics of Agriculture	3
342-250A	Principles of Animal Science	3
344-202B	Cellular Biology	3
346-252B	Plant Anatomy and Histology	2
346-353B	Plant Physiology	4
346-356A	Systematic Botany	4
350-330A	General Entomology	3
356-204A,B	Genetics	3
356-205A,B	Genetics Laboratory	2
360-201A,B	Statistical Methods I	3
362-230B	The Microbial World	3
366-402A	General Plant Pathology	3
367-211A	Principles of Plant Science	3
372-210A	Principles of Soil Science	3
372-315B	Soil Fertility and Fertilizers	3
	Additional course in Economics	3
		52

AGRONOMY ORIENTATION

Additional required courses, 15 credits

COURSE NUMBER	SUBJECT	CREDITS
340-331A	Cereal Crops	3
340-333A	Forage Crops	3
340-434B	Weed Biology and Control	3
340-439B	Field Management	3
340-490D	Projects	3
		15

Elective courses:

Free electives: to meet the minimum requirement of 90 credits for the degree

HORTICULTURE ORIENTATION

Additional Required Courses, 17 Credits

COURSE NUMBER	SUBJECT	CREDITS
358-338A	Pomology Small Fruits	3
358-339B	Pomology Tree Fruits	3
358-443A	Storage and Handling of Horticultural Crops	3
358-495D	Seminar	2
	Either	
358-432A	Vegetable Production I	
	or	
358-433B	Vegetable Production II	3
	Either	
358-421A	Landscape Plant Materials	
	or	
358-335B	Floriculture	3

Elective courses

Free electives: to meet the minimum requirement of 90 credits for the degree.

PLANT PROTECTION ORIENTATION

Additional Required Courses, 14 Credits

COURSE NUMBER	SUBJECT	CREDITS
340-434B	Weed Biology and Control	3
350-452A	Economic Entomology I	3
	or	
350-453B	Economic Entomology II	
	and	
366-301B	Introductory Mycology	3
	or	
366-405A	Intermediate Mycology	
366-496D	Seminar	2
366-403B	Diseases of Field and Forest Crops	
	or	
366-404B	Diseases of Horticultural Crops	3

Elective courses

Free electives: to meet the minimum requirements of 90 credits for the degree.

SOIL SCIENCE MAJOR

The soil science major provides a program of specialization in soil science combined with application to an area of soils use such as soil fertility and crop growth (soils and crops orientation), or conservation of soil and water (soil conservation orientation). Students planning graduate study and a career in research should choose the soil research orientation.

Academic Adviser: Professor G.R. Mehuys

Required courses, 44 credits

COURSE NUMBER	SUBJECT	CREDITS
334-231B	Economics of Agriculture	3
338-201A	Introductory Meteorology	3
342-250A	Principles of Animal Science	3
360-201A,B	Statistical Methods I	3
362-230B	The Microbial World	3
367-211B	Principles of Plant Science	3
372-210A	Principles of Soil Science	3
372-250B	Geology and Geomorphology	3
372-315B	Soil Fertility and Fertilizers	3
372-331B	Soil Physics	3
372-401B	Soil Chemistry	3
372-420A	Soil Survey	3
372-491A	Project I	3
372-493B	Project II	3
372-496D	Seminar	2
		44

GENERAL SOIL SCIENCE ORIENTATION

Primary electives: 39 credits selected from an approved list in consultation with the Academic Adviser. Free electives: to meet the minimum requirement of 90 credits for the degree.

SOIL AND CROPS ORIENTATION

Primary electives: 33 credits selected from an approved list in consultation with the Academic Adviser. Free electives: to meet the minimum requirement of 90 credits for the degree.

SOIL CONSERVATION ORIENTATION

Primary electives: 21 credits selected from an approved list in consultation with the Academic Adviser. free electives: to meet the minimum requirement of 90 credits for the degree.

SOIL RESEARCH ORIENTATION

Primary electives: 24 credits selected from an approved list in consultation with the Academic Adviser. Free electives to meet the requirement of 90 credits for the degree.

Curriculum for the B.Sc.(Agricultural Engineering)

The curriculum integrates the fundamentals common to all branches of engineering with the agricultural and biological sciences. It allows students to proceed from an understanding of why and how certain conditions affect plants and animals to the design of systems that enhance the condition of the environment and improve food handling and processing methods. Graduates have the academic qualifications for registration as professional engineers in any province in Canada.

Academic Advisers: Professors P.J. Jutras, McKyes and G.S.V. Raghavan

Required Courses, 86 credits.

COURSE NUMBER	SUBJECT	CREDITS
336-210A	Mechanics I	4
336-211B	Mechanics II	4
336-212A	Graphics	3

		2
336-214L	Surveying	3
336-215B	Hydrology	3
336-216B	Materials Science	4
336-305A	Fluid Mechanics	3
336-314B	Agricultural Structures	4
336-315A	Machine Design	3
336-325A	Food Engineering I	4
336-341B	Strength of Materials	3
336-412A	Agricultural Machinery	3
336-418B	Soil Mechanics and Foundations	3
336-490D,N	Project	3
304-281B	Electric Power	3
305-240B	Thermodynamics I	3
305-346B	Heat Transfer	2
305-362B	Mechanical Laboratory I	3
342-250A	Principles of Animal Science	3
367-211B	Principles of Plant Science	3
372-210A	Principles of Soil Science	3
360-201A,B	Statistical Methods I	3
360-202A	Calculus	3
360-203A	Digital Computing I	4
360-210B	Differential Equations	4
360-207A	Linear Algebra and Vector Analysis	3
	An economics course	86

Electives selected in consultation with Academic Adviser.

A. Advanced Agricultural Engineering – 9 or more credits from:

COURSE NUMBER	SUBJECT	CREDITS
336-322A	Food Production & Processing Waste Management	3
336-326B	Food Engineering II	3
336-411A	Off-Road Power Machinery	3
336-413A	Materials Handling Systems	3
336-419A	Structural Design	3
336-504B	Instrumentation and Control	3
336-511B	Agricultural & Earthmoving Power Machinery	3
336-513A,B	Physical Properties of Biological Materials	3

With the permission of the instructor, graduate level courses may be taken:

336-602A	Environmental Control in Agricultural Structures	3
336-605B	Functional Analysis of Machines	3
336-606C	Land Drainage Engineering	3
336-607B	Engineering Aspects of Plant Environment	3
336-609A	Hydrology	3
336-610D	Technologyof Fermented Food Production	6

B. Social Sciences, Humanities and Administrative Studies – 6 credits or more. Courses subject to approval by Academic Adviser.

C. Other University courses to round out the student's program and meet the requirement of a minimum of 106 credits for the degree.

Curricula for the B.Sc.(Agr.) Degree in Biological Sciences

This area of specialization covers many aspects of biology and gives first, a training in fundamentals of science and second, an opportunity to develop specialization. All students are required to take certain 'core' courses followed by required and elective courses related to the chosen specialty to meet a credit total of 90. The aim of the program is to develop expertise in applications of biology based on fundamental aspects.

Coordinator: Professor J.E. McFarlane

Core Courses Required for all major areas of specialization. (24 credits)

COURSE NUMBER	SUBJECT	CREDITS
332-211A	Biochemistry I	2
332-212A	Biochemistry laboratory	2
344-200A	Biology of Organisms I	3
344-201B	Biology of Organisms II	3
344-202B	Cellular Biology	3
344-205B	Principles of Ecology	3
356-204A,B	Genetics	3
356-205A,B	Genetics laboratory	2
360-201A,B	Statistical Methods I	3
		24

BOTANICAL SCIENCES MAJOR

Botanical Sciences offers foundation courses for those who like to work with green plants or fungi. This is the option for anyone planning a career in some aspect of Botany, Mycology or Plant Pathology.

Academic Adviser: Professor A.K. Watson

Required courses, 39 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core Courses	24
346-252B	Plant Anatomy and Histology	2
346-353B	Plant Physiology	4
346-356A	Systematic Botany	4
346-490D	Project	3
346-496D	Seminar	2
		39

Elective courses: At least 24 credits selected from the following list in consultation with the Academic Adviser.

COURSE NUMBER	SUBJECT	CREDITS
334-306B	Biological Instrumentation	3
346-355A,B	Special Topic in Botanical Sciences	2
346-451A	Plant Ecology	3
346-454B	Plant Morphology	3
362-230B	The Microbial World	3
362-331B	Microbial Ecology	3
366-301B	Introductory Mycology	3
366-355A,B	Special Topic in Plant Pathology	2
366-402A	General Plant Pathology	3
366-403B	Diseases of Field and Forest Crops	3
366-404B	Diseases of Horticultural Crops	3
366-405A	Intermediate Mycology	3

Free electives: to meet the minimum requirements of 90 credits for the degree.

ENVIRONMENTAL BIOLOGY MAJOR

This program aims at training scientists with basic knowledge in Biology and strong emphasis in Ecology. As ecologists they will be best equipped to investigate the scientific aspects of the relationships between organisms and their environment and they will be less oriented towards the political and sociological components of the ecosystem.

BIOLOGICAL ORIENTATION

Academic Adviser: Professor D.J. Lewis

Required courses, 32 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core Courses	24
344-495D	Environmental Biology Seminar	2
360-203A	Digital Computing I	3
	Project (in an appropriate department)	3
		32

Elective courses: A minimum of 30 credits selected from the following list in consultation with the Academic Adviser.

COURSE NUMBER	SUBJECT	CREDITS
336-215B	Principles of Hydrology	3
338-201A	Introductory Meteorology	3
346-356A	Systematic Botany	4
346-451A	Plant Ecology	3
349-307A	Natural History of the Vertebrates	3
349-311B	Ethology	3
349-312A	Principles of Systematic Zoology I	3
349-315A	Biology of Inland Waters I	3
349-316B	Biology of Inland Waters II	3
349-418A	Terrestrial Animal Ecology	4
350-444B	Soil Fauna Ecology	3
360-206A	Mathematical Methods in Ecology	3
360-610A	Statistical Methods II	3
362-230B	The Microbial World	3
372-210A	Principles of Soil Science	3
375-401A	Fisheries and Wildlife Management	4
375-410B	Wildlife Ecology	3
	An appropriate Physiology Course	

Free electives: To meet the minimum requirements of 90 credits for the degree.

PHYSICAL ORIENTATION

Academic Adviser: Professor R.H. Douglas

Required courses, 47 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core courses	24
332-339A	Introductory Physical Chemistry	3
338-201A	Introductory Meteorology	3
338-301B	Biothermodynamics	3
344-495D	Environmental Biology Seminar	2
360-202A	Calculus	3
360-203A	Digital Computing I	3
372-210A	Principles of Soil Science	3
	Project (in an appropriate Department)	3
		47

Elective courses: A minimum of 24 credits from the following list in consultation with the Academic Adviser.

COURSE NUMBER	SUBJECT	CREDITS
336-215B	Principles of Hydrology	3
338-303A	Advances in Atomic and Nuclear Science	3
338-308B	Biometeorology	3
338-404B	Radiation Biophysics	3
346-451A	Plant Ecology	3
360-205B	Differential Equations	3

360-206A	Mathematical Methods in Ecology	3
360-207A	Linear Algebra and Vector Analysis	4
360-610A	Statistical Methods II	3
362-230B	The Microbial World	3
372-330B	Physical Properties of Soils	3
375-410B	Wildlife Ecology	3
	An instrumentation course	
	An appropriate physiology course	

Free electives: To meet the minimum requirements of 90 credits for the degree.

MICROBIOLOGY MAJOR

Students receive training in fundamental principles and applies aspects of Microbiology. Successful graduates are competent to work in government and industrial research laboratories and in the pharmaceutical, fermentation and food industries.

Academic Adviser: Professor J.M. Ingram

Required courses, 48 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core Courses	24
344-306B	Biological Instrumentation	3
348-330A	Technical and Research Writing	3
362-200A	Laboratory Methods in Microbiology	3
362-230B	The Microbial World	3
362-337D	Frontiers in Microbiology	1
362-338A	Molecular Biology of Microorganisms	3
362-492D	Project	5
362-495D	Seminar	3
		48

Elective courses: A minimum of 24 credits selected from the following list in consultation with the Academic Adviser.

COURSE NUMBER	SUBJECT	CREDITS
332-213B	Analytical Chemistry I	2
332-214B	Anal. Chem. Lab.	2
332-230A*	Organic Chemistry I	3
332-334A	Analytical Chemistry II	3
338-301B	Biothermodynamics	3
360-202A*	Calculus	3
362-331B	Microbial Ecology	3
362-341B	Mechanisms of Pathogenicity	3
362-438A	Immunology	3
362-442A	Food Microbiology and Sanitation	3
366-301B	Introductory Mycology	3
366-406A	Virology	3

Free electives: To meet the minimum requirements of 90 credits for the degree.

* *Replace by another elective if already taken at CEGEP.*

ZOOLOGICAL SCIENCES MAJOR

By careful course selection candidates may emphasize general zoology, pure and applied entomology or soil and fresh water zoology. Students are given a basic background to proceed into various areas of zoological research and into professional work in entomology and applied zoology. Those who plan careers in animal taxonomy, zoological field work, pest management, etc., are advised to consider this area of specialization.

Academic Adviser: Professor W.N. Yule

Required courses, 33-35 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core Courses	24
344-306B	Biological Instrumentation	3
or		
349-306A	Histological Techniques in Zoology	3
349-490D	Project	3
or		
349-491D	Project	5
349-496D	Seminar and Literature Review	3
		33-35

Elective courses: A minimum of 32 credits selected in consultation with the Academic Adviser. Check the Announcement for years in which alternating courses are offered.

COURSE NUMBER	SUBJECT	CREDITS
349-307A	Natural History of the Vertebrates	3
349-308B	Comparative Morphology of the Vertebrates	3
349-311B	Ethology	3
349-312A	Principles of Systematic Zoology I	3
349-313B	Principles of Systematic Zoology II	3
349-315A	Biology of Inland Waters I	3
349-316B	Biology of Inland Waters II	3
349-418A	Terrestrial Animal Ecology	4
349-424A	Parasitology	3
350-330A	General Entomology	3
350-331A	Insect Morphology I	3
350-332B	Insect Morphology II	3
350-350B	Insect Development and Physiology	3
350-440B	Systematic Entomology	3
350-442A	Arachnida and Other Terrestrial Arthropods	3
350-444B	Soil Fauna Ecology	3
350-446B	Apiculture	3
350-452A	Economic Entomology I	3
350-453B	Economic Entomology II	3
350-454A	Pest Insects	3

In addition:

2 to 12 credits from: Animal Science, Nutrition & Dietetics, Genetics
2 to 12 credits from: Agriculture, Agronomy, Botany, Horticulture, Microbiology, Plant Pathology
2 to 9 credits from: Renewable Resources Development, Soil Science, Woodland Resources
2 to 9 credits from: Chemistry, Mathematics, Physics
Free electives: To meet the minimum requirements of 90 credits for the degree.

Curricula for the B.Sc.(Agr.) Degree in Renewable Resources Development

Students registered in any of the 6 Majors of this Group can expect to gain a comprehensive overview of renewable resources, the socio-economic implications of development and planning as well as a thorough knowledge of the basic science disciplines involved.

Coordinator: Professor M. Chevrier

Core of required courses for all major areas of specialization.

COURSE NUMBER	SUBJECT	CREDITS
334-200A	Principles of Economics I	3

344-205B	Principles of Ecology	3
352-300B	Communications—Extension Methods	3
360-201A,B	Statistical Methods I	3
370-242A	Social Processes and Social Institutions	3
375-201B	Renewable Resources	3
375-491D	Seminar	2
375-496D or 375-497D	Project I (or a project in an approved Dept. or Division) / Project II	3-5
		23/25

COMMUNITY RESOURCE DEVELOPMENT MAJOR

An interdisciplinary study of the development, use and management of natural and community resources for human needs. Integration of the physical, social, economic and institutional approaches to the development of an area's resources. Emphasis on public policy considerations affecting resource use and the attempts by citizens and government agencies to increase the economic opportunity and quality of life of communities and their surrounding regions.

Academic Adviser: Professor M. Chevrier

Required Courses: 29-31 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core courses	23/25
336-215B	Principles of Hydrology	3
372-210A	Principles of Soil Science	3
		29/31

Primary Electives: a minimum of 24 credits from the following courses to constitute a primary area of specialization, to be chosen by the student with the approval of the Academic Adviser.

COURSE NUMBER	SUBJECT	CREDITS
330-411B	International Agriculture	3
334-231B	Economics of Agriculture	3
334-333B	Resource Economics	3
334-430B	Agriculture, Food and Resource Policy	3
342-250A	Principles of Animal Science	3
352-301B	Community development	3
354-305A	Agricultural Vocabulary	3
360-203A	Digital Computing I	3
367-211A	Principles of Plant Science	3
370-360B	Rural Sociology	3
372-321A	Principles of Soil Rating	3
374-200B	Forest Resources	3
375-333A	Physical and Biological Aspects of Pollution	3
375-411B	Recreation Resources Management	3
375-200B	Conservation	3

Free Electives: to meet the minimum of 90 credits for the degree.

LAND PLANNING AND ENVIRONMENTAL CONSERVATION MAJOR

This major prepares the student to deal with problems integrated natural resource management and environmental protection with the objective of making optimal use of resources under any given set of economic, social, and ecological conditions.

In consultation with academic advisers the student selects a program which includes the following required and elective courses.

Academic Advisers: Professors J.D. MacArthur and J.F.G. Millette

Required Courses, 40-42 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core Courses	23/25
334-333A	Resource Economics	3
336-215B	Principles of Hydrology	3
338-201A	Introductory Meteorology	3
372-210A	Principles of Soil Science	3
372-250B	Geology and Geomorphology	3
372-325B	Principles of Land Planning	2

Primary Electives: a minimum of 30 credits selected from the following list.

COURSE NUMBER	SUBJECT	CREDITS
334-410B	Natural Resource Management	3
336-214L	Surveying	2
336-416A	Engineering for Land Development	3
338-308B	Biometeorology	3
346-353B	Plant Physiology	4
346-451A	Plant Ecology	3
349-315A	Biology of Inland Waters I	3
349-316B	Biology of Inland Waters II	3
360-206A	Mathematical Methods in Ecology	3
362-230B	The Microbial World	3
367-211A	Principles of Plant Science	3
370-341A	The Urban Community	3
370-360B	Rural Sociology	3
372-321A	Principles of Soil Rating	3
372-420A	Soil Survey	3
374-200B	Forest Resources	3
374-210C	Methods of Environmental Interpretation	3
375-310A	Photogrammetry and Photo Interpretation	2
375-333A	Physical and Biological Aspects of Pollution	3
375-401A	Fisheries and Wildlife Management	4
375-402B	Conservation	3
375-411B	Recreation Resource Management	3
375-415A	Law and the Protection of Flora and Fauna	2
375-437B	Assessing Environmental Impact	2
375-451A	Topics in Regional Landscape Development	3
375-452B	Topics in Site Landscape Development	3

Free Electives: to meet the minimum of 90 credits for the degree. Any course offered by McGill University may be chosen as a free elective.

WILDLIFE RESOURCES MAJOR

This Major concentrates on the biological resources emphasizing the co-development of competence in wildlife ecology and other complementary disciplines. It leads to work in resource planning, wildlife socio-economics, wildlife administration, wildlife management and wildlife resource evaluation.

Academic Advisers: Professors R. Titman and J. Doucet

Required courses, 48-50 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core courses:	23/25
346-356A	Systematic Botany	4
346-451A	Plant Ecology	3
349-307A	Natural History of Vertebrates	3
375-401A	Fisheries and Wildlife Management	4
375-410B	Wildlife Ecology	3
375-415A	Law and the Protection of Fauna and Flora	2
	and any two of	6

336-215B	Principles of Hydrology
338-201A	Introductory Meteorology
372-210A	Principles of Soil Science

48/50

Primary Electives: a minimum of 24 credits selected from the following list in consultation with the Academic Adviser.

COURSE NUMBER	SUBJECT	CREDITS
334-333A	Resource Economics	3
342-301B	Principles of Animal Breeding	3
342-323A	Mammalian Physiology	4
342-330A	Fundamentals of Nutrition	3
342-522B	Reproductive Physiology	3
349-308B	Comparative Morphology of the Vertebrates	3
349-311B	Ethology	3
349-315A	Biology of Inland Waters I	3
349-418A	Terrestrial Animal Ecology	4
349-424A	Parasitology	3
350-330A	General Entomology	3
356-204A,B	Genetics	3
356-205A,B	Genetics Laboratory	2
374-200B	Forest Resources	3
374-330A	Private Forestry	3
374-440B	Silviculture	3
375-200B	Conservation	3
375-310A	Photogrammetry and Photo-Interpretation	2
375-411B	Recreation Resource Management	3
375-420A	Topics in Ornithology	3
375-437B	Assessing Environmental Impact	2

Secondary electives: a minimum of 18 credits in related courses selected in consultation with Academic Adviser. Free electives: to meet the minimum requirement of 90 credits for the degree.

Curricula for the B.Sc.(F.Sc.) Degree in Food and Consumer Sciences

This area of specialization offers the student a number of related Majors in the field of Food and Consumer Sciences. Depending on the Major completed, the student is a) prepared to serve the community in all types of consumer information services, b) has the necessary background to become a Home Economics Specialist Teacher, c) can enter the professions of dietetics, food technology, or food administration, d) can proceed to a career in research and development, or e) do graduate work in the different scientific fields.
Coordinator:Professor E.S. Idziak

CONSUMER SERVICES MAJOR
The consumer services major provides a background for students who plan to work directly with consumers or in consumer related areas. Students may choose from three options: food, business or family resource management. Opportunities for employment may be found with government, business or industry.
Academic Adviser: Ms. L. Carter

Required courses, 60 credits; Electives, 30 credits

	COURSE NUMBER	SUBJECT	CREDITS
Term 1	332-322A	Biochemistry I	2
	332-212A	Biochemistry Laboratory	2
	334-200A	Principles of Economics I	3
	382-332A	Consumer in the Marketplace	3
	376-200A	Principles of Food Science	3
	386-232A	Textiles-Natural & Man-made Fibres	3

Term 2	334-201B	Principles of Economics II	3
	362-230B	Microbial World	3
	376-201B	Application of Food Science Principles	3
	378-331B	Family Management	3
	382-207B	Introductory Nutrition	3
Term 3	348-330A	Technical & Research Writing	3
	360-201A	Statistical Methods	3
	384-422A	Instructional Communications	3
		Electives	6
Term 4	334-230B	Economics of Marketing	3
	370-243B	The Study of Human Behaviour	3
	381-333B	Personal & Family Finance	3
		A Computer Science Course	3
		Elective	3
Term 5	377-420D	Directed Studies in Food Science	3
	377-490D	Food & Consumer Sciences Project I	3
	377-496D	Food & Consumer Sciences Seminar II	2
		Electives	9
Term 6		Electives	12
		Total	90

FAMILY RESOURCE MANAGEMENT ORIENTATION

Students choosing this option may find consumer education positions in industry or social service agencies. Some students may elect to pursue a Diploma in Home Economics Education (Faculty of Education) to prepare for a teaching career.

Primary Electives: A minimum of 15 credits selected from the following list in consultation with the academic adviser.

COURSE NUMBER	SUBJECT	CREDITS
352-300B	Communications—Extension Methods	3
368-301A	Psychology I	3
370-341A	The Urban Community	3
378-332A	Family Studies - Development	3
378-333B	Family Studies - Relationships	2
381-401A	Problems in Family Finance	3
386-220B	Contemporary Clothing Construction	3
386-322B	Psychological & Social Bases of Cloth	3
*418-291B	Observation and Familiarisation	1
*426-298A	Applied Design	3
436-375B	Approaches to Teaching Housing and Design	3

Free Electives may be selected from all courses offered on the Macdonald Campus or on the Montreal Campus of McGill University in consultation with the Academic Adviser to meet the minimum requirement of 90 credits.

* Presented by the Faculty of Education on the Macdonald Campus.

FOODS ORIENTATION

This option is intended to prepare students who plan to work in consumer affairs positions with food producers, government agencies and other food related industries.

Primary Electives: A minimum of 15 credits selected from the following list in consultation with the academic adviser.

COURSE NUMBER	SUBJECT	CREDITS
334-440A	Advanced Cultural & Food Marketing	3
358-444B	Fruit and Vegetable Processing	3
362-442A	Food Microbiology & Sanitation	3
376-251B	Food Chemistry	3

376-340A	Chemistry of Food Products I	3
376-341B	Chemistry of Food Products II	3
376-350B	Food Quality Assurance	3
376-413B	Product Development	3
380-345D	Food Service Systems Management	3
382-436A	Applied Human Nutrition	2

Free Electives may be selected from all courses offered on the Macdonald Campus or on the Montreal Campus of McGill University in consultation with the Academic Adviser to meet the minimum requirement of 90 credits.

BUSINESS ORIENTATION

Students concentrating in this option may find employment with consumer protection agencies (both federal and provincial), government information agencies, promotional and public relations positions in industry, or banks and lending institutions.

Primary Electives: A minimum of 15 credits selected from the following list in consultation with the Academic Adviser.

COURSE NUMBER	SUBJECT	CREDITS
280-221	Social Psychology	3
280-352	Marketing Management	3
275-351	Marketing and Society	3
275-451	Marketing Research	3
275-452	Consumer Behavior	3
275-453	Advertising Management	3
378-384	Business Law I	3
278-385	Business Law II	3
278-386	Communication Skills in Management	3
381-401A	Problems in Family Finance	3

Free Electives may be selected from all courses offered on the Macdonald Campus or on the Montreal Campus of McGill University in consultation with the Academic Adviser to meet the minimum requirement of 90 credits.

NUTRITION MAJOR

The graduate from a nutrition Major normally will continue on to further studies preparing for careers in research or as specialists in nutrition. Nutritionists, aside from working as researchers and university teachers, may be employed by government in health protection, in food and drug regulation, and in world development programs or by the food industry in product development, and in nutrient analysis.

Academic Adviser: Prof. H.J. Hueckel

Required courses, 72 credits; Electives 18 credits

	COURSE NUMBER	SUBJECT	CREDITS
Term 1	332-211A	Biochemistry I	2
	332-212A	Biochemistry Laboratory	2
	360-201A,B	Statistical Methods I	3
	360-203A	Digital Computing I	3
	376-200A	Principles of Food Science	3
Term 2	332-213B	Analytical Chemistry I	2
	332-214B	Analytical Chemistry Laboratory	2
	332-234B	Biochemistry II	3
	344-202B	Cellular Biology	3
	362-230B	The Microbial World	3
	382-207B	Introductory Nutrition	3
Term 3	332-334A	Analytical Chemistry II	3
	338-303A	Advances in Atomic and Nuclear Science	3
	342-323A	Mammalian Physiology	4
	342-330A	Fundamentals of Nutrition	3
		Elective	3

Term 4	338-405B	Elementary Tracer Techniques	3
	342-337B	Human Nutrition	3
	376-251B	Food Chemistry	3
	382-344B	Diet Therapy I	2
		Electives	6
Term 5	332-451A	Food Analysis I	3
	377-491D	Food and Consumer Sciences Project II	5
	377-497D	Food and Consumer Sciences Seminar III	3
	382-436A	Applied Human Nutrition	2
	382-445A	Diet Therapy II	3
Term 6		Electives	12
		Total	90

Elective courses should be chosen in consultation with Academic Adviser.

FOOD ADMINISTRATION MAJOR

A wide choice of management careers exists in the Food Industry. Graduates may choose from opportunities in food service areas of public restaurants, cafeterias, catering services, in-plant feeding, the armed services, institutional operations, as well as in the related fields of sales and advertising.

Academic Adviser: Professor D.A. Raymond

Required courses, 60 credits. Electives, 30 credits

	COURSE NUMBER	SUBJECT	CREDITS
Term 1	332-211A	Biochemistry I	2
	332-212A	Biochemistry Laboratory	2
	334-200A	Principles of Economics I	3
	376-200A	Principles of Food Science	3
	380-242A	Management Theories and Practices	3
Term 2	344-202B	Cellular Biology	3
	360-201B	Statistical Methods I	3
	362-230B	The Microbial World	3
	376-201B	Application of Food Science Principles	3
	382-207B	Introductory Nutrition	3
Term 3		Computer Science Courses	6
		Electives	9
Term 4	334-201B	Principles of Economics II	3
	375-201B	Renewable Resources	3
	380-343B	Accounting and Cost Control	3
		Electives	6
Term 5	362-442A	Food Microbiology and Sanitation	3
	368-301A*	Psychology	3
	377-490D	Food and Consumer Sciences Project	3
	380-345D	Food Service Systems Management	4
	380-446A	Personnel Management	4
Term 6	376-413B	Product Development	3
		Electives	12
		Total	90

* If a Psychology course has been taken at the CEGEP level, an exemption will be granted. Students must then take an additional 3 Credit elective.

Elective courses should be chosen in consultation with Academic Adviser.

Majors leading to membership in professional corporations

DIETETICS MAJOR

Requirements for admission to the Corporation of Professional Dietitians of Québec and the Canadian Dietetic Association include a degree with credits in specified courses, plus supervised professional experience in the areas of nutrition, food service administrationand community nutrition. Graduates are qualified for positions in health service institutions, food service industry, nutrition education and community health service agencies. They may elect to specialize in one area of dietetic practice after graduation. The duration of the program is approximately 3½ years.

Academic Adviser: Mrs. L.J. Currie

Required Courses, 100 credits. Electives, 15 credits.

	COURSE NUMBER	SUBJECT	CREDITS
Term 1	332-211A	Biochemistry I	2
	332-212A	Biochemistry Laboratory	2
	376-200A	Principles of Food Science	3
	380-242A	Management Theories and Practices	3
		Electives (choose two):	6
	334-200A	Principles of Economics I	
	354-300A	Technical French	
	368-301A	Psychology	
Term 2	332-234B	Biochemistry II	3
	344-202B	Cellular Biology	3
	362-230B	The Microbial World	3
	376-201B	Application of Food Science Principles	3
	382-207B	Introductory Nutrition	3
	382-208G	Professional Practice (Stage) in Dietetics Level I	4
Term 3	342-323A	Mammalian Physiology	4
	342-330A	Fundamentals of Nutrition	3
	360-201A	Statistical Methods I	3
	380-345D	Food Service Systems Management	4
		Elective (choose one):	3
	368-301A	Psychology	
	376-340A	Chemistry of Food Products I	
	381-332A	Consumer in the Market Place	
Term 4	342-424B	Metabolic Endocrinology	3
	380-343B	Accounting and Cost Control	3
	382-337B	Human Nutrition	3
	382-310E	Professional Practice (Stage) in Dietetics Level II	6
	382-344B	Diet Therapy I	2
		Elective (choose one):	3
	370-243B	The study of Human Behaviour	
	376-341B	Chemistry of Food Products II	
	378-331B	Family Management	
Term 5	382-490D	Dietetics Project	3
	380-446A	Personnel Management	4
	382-436A	Applied Human Nutrition	2
	382-445A	Diet Therapy II	3
	384-422A	Instructional Communications	3
		Elective (choose one):	
	348-330A	Technical and Research Writing	
	354-300A	Technical French	
	362-442A	Food Microbiology and Sanitation	
Term 6	382-403B	Community Nutrition	3
	382-409B	Professional Practice (Stage) in Dietetics Level III	7
Term 7	382-410A	Professional Practice (Stage) in Dietetics Level IV	15
		Total	115

Elective courses should be chosen in consultation with the Academic Adviser. A CGPA of at least 2.5 must be maintained and all required courses must be cleared with a grade of C or better. Each level of Professional Practice (Stage) is a prerequisite for the following one.

A distinctive pin is available for students who complete the dietetics program. A charge is made for the pin.

FOOD SCIENCE MAJOR

The course selection reflects the professional requirement for membership in the association of Food Technologists. Graduates find employment in the areas responsible for product quality control, food processing management, industrial research and development, or they may continue to do graduate studies in the applied sciences.

Academic Adviser: Ms. K. Lapsley

Required courses: 70 credits Electives 20 credits

	COURSE NUMBER	SUBJECT	CREDITS
Term 1	332-211A	Biochemistry I	2
	332-212A	Biochemistry Laboratory	2
	334-200A	Principles of Economics I	3
	360-201A	Statistical Methods I	3
	360-203A	Digital Computing I	3
	376-200A	Principles of Food Science	3
Term 2	332-213B	Analytical Chemistry I	2
	332-214B	Analytical Chemistry Laboratory	2
	332-234B	Biochemistry II	3
	362-230B	The Microbial World	3
	376-251B	Food Chemistry	3
		Elective	3
Term 3	332-451A	Food Analysis I	3
	332-334A	Analytical Chemistry II	3
	336-325A	Food Engineering	3
	362-442A	Food Microbiology and Sanitation	3
	376-340A	Chemistry of Food Products I	3
Term 4	376-350B	Principles of Food Quality Assurance	3
	358-444B	Fruit and Vegetable Processing	3
	376-341B	Chemistry of Food Products II	3
	376-350B	Principles of Food Quality Assurance	3
		Elective	6
Term 5	332-339A	Introductory Physical Chemistry	3
	342-330A	Fundamentals of Nutrition	3
	348-330A	Technical and Research Writing	3
	376-414A	Advanced Food Processing	3
	377-490D	Food Consumer Sciences Project I	3
	377-496D	Food and Consumer Sciences Seminar II	2
Term 6		Electives	11
		Total	90

Elective courses should be chosen in consultation with Academic Adviser.

FOOD CHEMISTRY ORIENTATION

The curriculum of the Food Chemistry Orientation involves training in both the basic and applied sciences relating to chemical aspects of Food Science and Technology. Successful graduates are qualified for employment in government or industrial institutions. The course content is also suitable for graduates who may wish to extend their studies to the graduate level in one of the applied sciences, such as food science or the nutritional sciences.

This Orientation does not significantly differ from the Food Orientation of the Agricultural Chemistry Major, except for the degree designation.

Academic Adviser: Professor T.G. Smyrl

Required Courses, 84 credits; Electives, 6 credits.

	COURSE NUMBER	SUBJECT	CREDITS
Term 1	332-211A	Biochemistry	2
	332-212A	Biochemistry Laboratory	2
	332-230A	Organic Chemistry	3
	338-303A	Advances in Atomic and Nuclear Science	3
	360-201A	Statistical Methods I	3
		Elective	3
Term 2	332-213B	Analytical Chemistry I	2
	332-214B	Analytical Chemistry Laboratory	2
	332-231B	Organic Chemistry II	3
	332-234B	Biochemistry II	3
	362-230B	Microbial World	3
	376-251B	Food Chemistry	3
Term 3	332-333A	Organic Chemistry III	3
	332-334A	Analytical Chemistry II	3
	332-339A	Introductory Physical Chemistry	3
	332-451A	Food Analysis I	3
	376-340A	Chemistry of Food Products I	3
Term 4	332-335B	Analytical Chemistry III	3
	332-340B	Advanced Physical Chemistry	3
	332-434B	Organic Chemistry IV	3
	332-452B	Food Analysis II	3
	358-444B	Fruit and Vegetable Processing	3
Term 5	332-320A	Colloid Sciences	3
	332-614A	Protein and Nucleic Acid Biochemistry	3
	336-325A	Food Engineering I	3
	342-650D	Advanced Animal Biochemistry	6
	377-491D	Food and Consumer Sciences Project II	5
	377-496D	Food and Consumer Sciences Seminar II	2
Term 6	332-615B	Muscle Biochemistry	3
	338-301B	Biothermodynamics	3
	376-341B	Chemistry of Food Products II	3
		Elective	3
		Total	90

Elective courses should be chosen in consultation with Academic Adviser.

Curriculum for the B.Ed. Degree Majoring in Home Economics

This program leads to a B.Ed. degree majoring in home economics. The student registers for two years in the School of Food Science (Macdonald Campus) followed by one year in the Faculty of Education (Montreal Campus). Graduates also receive a Teaching Permit for secondary schools in Québec which is replaced by a Teaching Certificate after two years of successful teaching. This program also prepares the student for extension communications positions in home economics.

Academic Adviser: Mrs. E. Jenneway Eaman

Required courses, 43 credits; Electives, 18 credits

	COURSE NUMBER	SUBJECT	CREDITS
Term 1	370-341A	The Urban Community	3
	376-200A	Principles of Food Science	3
	378-332A	Family Studies-Development	3
	386-232A	Textiles-Natural and Man-made Fibres	3
		Elective	3
Term 2	376-201B	Application of Food Science Principles	3
	382-207B	Introductory Nutrition	3
	386-220B	Contemporary Clothing Construction	3
	*418-291B	Observation and Familiarisation	1
	*436-375B	Approaches to Teaching Housing & Design	3
		Elective	5

Term 3	381-332A	Consumer in the Marketplace	3
	384-422A	Instructional Communication	3
	*426-298A	Applied Design	3
		Electives	6
Term 4	378-331B	Family Management	3
	381-333B	Personal and Family Finance	3
	386-322B	Psychological & Social Bases of Clothing	3
		Electives	6
		Total	61

* Presented by Faculty of Education on Macdonald Campus

Elective courses should be chosen in consultation with the Academic Adviser. A further 29 credits will be taken in the Faculty of Education for completion of the degree.

Major leadingto a B.Com. Degree in Food Services Administration

Careers in hotel, motel, and tourist management and in the management of restaurants, cafeterias, food service category and related areas are open to graduates of this major.

Academic Adviser: Professor D.A. Raymond

Credits to be taken at Macdonald College — 31 credits

	COURSE NUMBER	SUBJECT	CREDITS
Term 1	362-442A	Food Microbiology and Sanitation	3
	376-200A	Principles of Food Science	3
	377-490D	Food and Consumer Sciences Project I	3
	380-242A	Management Theories and Practices	3
	380-345D	Food Service Systems Management	4
Term 2	376-201B	Application of Food Science Principles	3
	377-421B	Directed Studies in Food Science	3
	382-207B	Introductory Nutrition	3
		Elective	2
		Total	27

Credits to be taken in the Faculty of Management, 63 credits.

4.6 ASSOCIATED COLLEGE

By special agreement, the Nova Scotia Agricultural College, Truro, N.S., has arranged to provide their students with a program of study permitting transfer to the upper years in Agriculture or Food Science. Students who have completed such a program of study with satisfactory standing in courses equivalent to those of the B.Sc.(Agr.), the B.Sc.(Agr.Eng.) and the B.Sc.(F.Sc.) curricula will be admitted to the appropriate years of the program, provided that their overall averages, and their grades in individual courses are considered satisfactory by the Committee on Admissions.

4.7 REQUIREMENTS FOR GRADUATION

The minimum requirements for graduation are a C.G.P.A. of 2.00 with the minimum credit requirements for the major. Students majoring in Agricultural Engineering are also required to have at least 650 hours experience in some phase of agricultural engineering work approved by the Agricultural Engineering Department. No summer work or practical experience requirements need be met in the case of students registered in other majors.

5 DESCRIPTION OF COURSES

Course Numbering System

000-000A

- semester offered
- undefined
- level of instruction
- subject

Levels of Instruction

2, 3 & 4 – undergraduate years
5 and up – postgraduate

Semester Combinations

A – fall
B – winter
C – second summer
D – fall and winter
E – winter and summer
G – summer and fall
L – first summer
N – winter and fall (skipped summer)

5.1 AGRICULTURE

330-411B INTERNATIONAL AGRICULTURE. (3 Credits; 2 lectures and 1 conference). A study of international agriculture; physical, biological and social resource bases for agriculture in developing countries; land tenure and marketing; technology transfer and aid programs; sugar, cassava and animal production systems; rural development programs.
Professors Donefer, Steppler and Mr. Van Lierop

330-495D,N SEMINAR AND ASSIGNMENT. (2 Credits; 1 lecture). Preparation, presentation and discussion of reports upon approved agricultural subjects chosen in consultation with staff members of the departments concerned.
Professor Norris

5.2 CHEMISTRY

332-110A INORGANIC CHEMISTRY. (3 Credits; 3 lectures). The course will be comprised of discussions and problems in writing and balancing equations, chemical equilibrium and mass action, stoichiometry, colligative properties and solution laws.
Professor Marshall

332-211A BIOCHEMISTRY I. (2 Credits; 3 lectures, Prerequisite: 332-230A or equivalent). Chemistry of carbohydrates, lipids, proteins and nucleic acids; enzymes coenzymes and enzyme kinetics; introduction to intermediary metabolism.
Professor Hueckel

332-212A BIOCHEMISTRY LABORATORY. (2 Credits; 1 lecture, 1 lab. Corequisite: 332-211A). The laboratory use of ionic strength and pH; the chemical properties of carbohydrates, lipids, proteins and enzymes; the instruction of laboratory techniques such as titration, chromatography, the use of the analytical balance and the pH meter.
Professor Hueckel

332-213B ANALYTICAL CHEMISTRY I. (2 Credits; 2 lectures and 1 conference). An introductory course in analytical chemistry. Students should have a basic knowledge of inorganic chemistry. Topics will include, sampling methods, sample preparation, separation methods, precipitations, acidimetry, redoximetry, chemistry of the common heavy metals.
Professor Marshall

332-214B ANALYTICAL CHEMISTRY LABORATORY. (2 Credits; 1 lecture and 1 lab.) Practical aspects of analytical chemistry including the use and handling of volumetric equipment, analytical balances, preparation and use of primary standards, and standard solutions, separation and titration techniques, gravimetric analysis, acidimetry and redoximetry. The laboratory sessions will provide practical experience in various techniques and methods used in analytical chemistry.
Professor Marshall

332-230A ORGANIC CHEMISTRY I. (3 Credits; 3 lectures and 1 lab.) Fundamental concepts of organic chemistry; structure, nomenclature and properties of typical aliphatic and aromatic compounds lipids, carbohydrates and proteins. Laboratory work includes exercises on recrystallization, distillation, extraction, chromatography and some simple organic preparations.
Professor Baker

332-231B ORGANIC CHEMISTRYII. (3 Credits; 3 lectures and 1 lab.; Prerequisite: 332-230A). Introduction to organic synthesis and reactions of functional groups of aliphatic, aromatic and hetercyclic compounds. Basic concepts of Sn1 and Sn2 displacement reactions, resonance, geometrical and optical isomerism, free radicals and polarimetry. Laboratory work includes the preparation, purification and studies on the properties of several organic compounds.
Professor Baker

332-234B BIOCHEMISTRY II. (3 Credits; 3 lectures and 1 lab.; Prerequisite: 332-211A and 332-212A). Regulation of anabolism and catabolism in man and domestic animals; the action of hormones; alimentary digestion and absorption; urinary and fecal excretion.
Professor Hueckel

332-320A COLLOID SCIENCES. (3 Credits; 2 lectures and 1 lab.). Colloidal state of matter, adsorption phenomena, coalescence, emulsion and foams, gel, electrical and other properties of colloidal particles, electrophoresis, atmospheric aerosols, fog and smoke.
Professors Barhakur and Paquette

332-333A ORGANIC CHEMISTRY III. (3 Credits; 2 lectures and 1 lab.; Prerequisite: 332-231B). A practical course in organic synthesis involving the synthesis and purification of numerous organic compounds and derivatives. Experience in laboratory techniques including glass blowing.

Principles of organic synthesis, reaction mechanisms and the chemical literature.
Professor Baker and Mr. Barrett

332-334A ANALYTICAL CHEMISTRY II. (3 Credits; 2 lectures and 1 lab.). Theoretical aspects of potentiometry, colourimetry, flame photometry, atomic photometry, atomic absorption, chromatography, ion exchange and reliability of chemical analyses (specificity, accuracy, precision, sensitivity). The laboratory will provide practical experience in the analytical methods dealt with in the lectures.
Professor Marshall

332-335B ANALYTICAL CHEMISTRY III. (3 Credits; 2 lectures and 1 lab.). Topics will include analytical classification of elements, complex-ion formation, chelation, buffering systems, hydration and hydrolysis of metal ions. The laboratory will be an individualized program aimed at providing experience in handling micro and semi-micro quantities and the design of systems of analysis in relation to different practical situations.
Professor Marshall

332-339A INTRODUCTORY PHYSICAL CHEMISTRY. (3 Credits; 3 lectures and 1 lab.). Introduction to kinetic theory, thermodynamics, properties of liquids and solids; chemical equilibrium and the law of mass action, phase rule, properties of solutions, chemical kinetics, photochemistry, electrochemistry and radioactivity.
Professor Paquette

332-340B ADVANCED PHYSICAL CHEMISTRY. (3 Credits; 2 lectures and 1 lab.; Prerequisite: 332-339A). An advanced course in thermodynamics, molecular structure, kinetics, properties of electrolytes, absorption and quantum aspects of physical chemistry.
Professor Paquette

332-434B ORGANIC CHEMISTRY IV. (3 Credits; 2 lectures and 1 lab.; Prerequisites: 332-333A, 360-202A). The theory and application of infrared spectroscopy, nuclear magnetic resonance, thinlayer chromatography and gas-liquid partition chromatography to the identification of compounds prepared in the laboratory. Lectures will deal with reactivity, selectivity, transition states, hyperconjugations, rearrangements, bond dissociation energies and certain aspects of stereo chemistry.
Professors Baker and Marshall

332-451A FOOD ANALYSIS I. (3 Credits; 2 lectures and 1 lab.; Prerequisites: 332-211A and 332-212A). Proximate analysis. Chemical examinations of sugars, starches, cereals, oil seeds, fat and fat products, fruits, dairy and meat products. Vitamins, food colours, flavours. Physiochemical methods used in food analysis.
Professor Paquette

332-452B FOOD ANALYSIS II. (3 Credits; 2 lectures and 1 lab.; Prerequisite: 332-451A). A specialized course on the principal analytical techniques used for analysis of carbohydrate, lipid, protein and vitamin constituents of foods and feedstuffs, and for detection and determination of chemical additives and contaminants.
Professor Paquette

332-490D,N PROJECT. (5 Credits). A project involving a literature review, laboratory work and the submission of a written report. Assigned to students in the final year of the Agricultural Chemistry major.
Professor Baker

332-491D,N PROJECT. (3 Credits). A project involving laboratory work. May be elected by any final year student other than those in Agricultural Chemistry.
Professor Baker

332-495D,N SEMINAR. (2 Credits. Oral presentation (50 minutes) and discussion of a selected topic. Required to attend all Departmental (Agr.Chem. and Physics) seminars and to prepare a written abstract of each of the seminars.
Professor Marshall

5.3 ECONOMICS

334-200A PRINCIPLES OF ECONOMICS I. (3 Credits; 3 lectures). The field of economics as it relates to the activities of individual consumers, firms and organizations. Emphasis throughout is on the application of economic principles and concepts to everyday decision making and to the analysis of current economic issues.

334-201B PRINCIPLES OF ECONOMICS II. (3 Credits; 3 lectures; Prerequisite: 334-200A or equivalent). The overall economic system, how it works, and the instruments used to solve social problems. Emphasis will be on decision-making involving the entire economic system and segments of it.

334-230B ECONOMICS OF MARKETING. (3 Credits; 3 lectures; Prerequisite: 334-200A or equivalent). Marketing principles and practices, their relationship to the agriculture-food system, and the economic impact on all segments of this system. Emphasis on the application of marketing principles in problem-solving and in developing marketing and communication skills of the individual.
Professor Coffin

334-231B ECONOMICS OF AGRICULTURE. (3 Credits; 2 lectures; 1 conference; Prerequisite: 334-200A or equivalent). The structure and scope of Canada's agriculture-food system, the principles of operation and financing its com-

ponents, linkages, functions. Focus to be on management of the various components and the entire system, types of problems confronted now and in the future.
Staff

334-320A ECONOMICS OF AGRICULTURAL PRODUCTION AND PRICES. (3 Credits, 3 lectures). An intermediate course in agricultural economics dealing with economic concepts as applied to agricultural production and commodity pricing: agricultural and food demand and supply analysis, production and cost functions and product pricing in relation to agricultural markets.
Professor Coffin

334-331A FARM BUSINESS MANAGEMENT. (3 Credits; 3 lectures; Prerequisite: 334-200A or equivalent). Managing a farm business. Topics include: the decision making process, farm business centre and farm records, farm management and economic concepts, farm planning and budgeting, input management (land, capital, labour and time), tax management (farm organization, estate planning, etc.).
Mr. Couture

334-333A RESOURCE ECONOMICS. (3 Credits; Prerequisites: 334-200A or equivalent). The role of resources in the environment, use of resources, and management of economic resources within the firm or organization. Problem-solving, case studies involving private and public decision-making in organizations are utilized.

334-350B AGRICULTURAL FINANCE. (3 Credits, 3 lectures). The economic study of the acquisition and use of capital in agriculture. Topics include: the analysis of Financial statements; farm appraisal; investment analysis and the treatment of risk in decision making; the cost of capital and the role of financial intermediaries serving agriculture; aggregate investment and financing in agriculture.

334-430B AGRICULTURE, FOOD AND RESOURCE POLICY. (3 Credits; 3 lectures). Canadian. North American and International agriculture, food and resource policies, policy instruments, programs and their implications. Economic analysis will be applied to examine the underlying principles, procedures and objectives of various policy actions affecting agriculture.
Professor Al-Zand

334-435A AGRICULTURAL ECONOMICS RESEARCH METHODS AND SPECIAL PROBLEMS. (3 Credits; 3 lectures). The nature, methods, and objectives of agricultural economics research and procedures for investigating the economic problems affecting food and agriculture. Emphasis is on problem identification, collecting, analyzing and presenting evidence for decision making. Students are expected to pursue an agricultural economic research project for developing research skills.
Professor Al-Zand

334-440A ADVANCED AGRICULTURE AND FOOD MARKETING. (3 Credits; 3 lectures). The nature and the economic organization of agricultural and food marketing including the application of economic concepts to analyse the agricultural and food marketing problems and procedures, to evaluate their impact on Canadian and North American agriculture. Pricing and marketing of principal agricultural products in Canada is examined.
Professor Al-Zand

334-442B ECONOMICS OF FOOD SYSTEMS DEVELOPMENT. (3 Credits; 3 lectures). The description, analysis and factors affecting the design and development of present and future food systems in Canada and world-wide. Major emphasis is on the socio-economic dimensions and development planning of alternative agriculture-food systems.

334-450B AGRI-BUSINESS MANAGEMENT. (3 Credits; 3 lectures). Management and agricultural business dealing with an agri-business firm engaged in agricultural production and marketing, and related farm supply business. Focus on agri-business, organization, operation and financial management and agri-business policy in today's complex and changing international environment.

334-490D,N SEMINAR IN AGRICULTURAL ECONOMICS. (2 credits). Oral and written presentation and discussion on topics and research problems of current interest in agricultural economics by staff, students and special guests.
Professor Coffin and Staff

334-495D,N PROJECT. (3 Credits). Under the supervision of a staff member of the Department of Agricultural Economics. Project topic will concern the economics of agriculture, food, or resource development. An agreement between the students and involved staff members must be reached prior to registration.
Professor Al-Zand and Staff

5.4 AGRICULTURAL ENGINEERING

NOTE: Instructors may refuse registration in a course to any student who does not have, in their opinion, an adequate background in the area.

336-210A MECHANICS I. (4 Credits; 3 lectures and 2 hours labs or problems). Non-concurrent force systems; analysis of simple trusses and multi-force frames; friction; shearing forces and ben-

ding moments in beams and frames; centres of gravity; solution of problems by energy methods.
Professor McKyes

336-211B MECHANICS II. (4 Credits; 3 lectures and 2 hours labs or problems; Prerequisite: 336-210A). Kinematics, dynamics, energy, momentum, relative motion, the moment of momentum of particles and rigid bodies; the inertia tensor; introduction to vibrations.
Professor Raghavan

336-212A GRAPHICS. (3 Credits; 2 lectures and 2 2-hour labs.). Solution of two- and three- dimensional geometry problems by graphical techniques, charts and nomography; graphical calculus.
Professor Raghavan

336-214L SURVEYING. (2 Credits; 2 weeks following second term). Use of engineer's tape, level, transit, plane table, hand level, and compass for land measurement, differential levelling, topographic mapping, surveying computations and preparation of plans.
Professor Broughton

336-215B PRINCIPLES OF HYDROLOGY. (3 Credits; 3 lectures and one 2-hour lab.). Measurement and analysis of components of the water cycle. Precipitation, mass curves, intensity— duration— frequency relationships. Energy balance, evapotranspiration from lakes, soil and vegetal covers. Interception, infiltration, ground-water and wells. Runoff hydrograph components. Estimation of water quantities and water flow rates for design of water control projects. Snowmelt, basin yield.
Professor Broughton

336-216B MATERIALS SCIENCE. (3 Credits; 2 lectures and 1 2-hour lab.). Relation between structure and properties in ceramic and organic materials. Bonding, structures, imperfections. Phase diagrams. Shaping, joining and testing of materials. Heat treatment, work in hardening and annealing of metals, introduction to physical metallurgy and processes. Failure theories.
Mr. Perraton

336-305A FLUID MECHANICS. (4 Credits; 3 lectures and 1 2-hour lab. or problems. Prerequisites: 336-211B, 360-202A). Properties of fluids; principles of flow of incompressible and compressible fluids; pressure boundary layers; conduit and open channel systems; simple applications to turbo machinery.
Professor Raghavan

336-312B CIRCUIT ANALYSIS. (3 Credits; 3 lectures and 1 2-hr. lab. or problems. Prerequisite: 360-205B). General circuit laws and d.c. circuits; electromagnetic circuits; inductance and capacitance, natural and forced response of circuits; analysis of single phase and three phase networks; electromechanical, electrochemical and electron energy conversion; electrical instruments.
Professor Raghavan

336-314B AGRICULTURAL STRUCTURES. (3 Credits; 3 lectures and 2-hr. lab.). Analysis and design of structures to house animals and plants and to process and store animal and plant products. Introduction to environmental control systems and animal waste management.
Professor Jutras

- **336-315A MACHINE DESIGN.** (4 Credits; 3 lectures, 2 hours-problems; Prequisite: 336-341B.). (Offered in alternate years). Designof shafting, bearings, gear, belt and chain drives, clutches, brakes, vibrations, fasteners, welded joints, frames. Principles and practices of Engineering Drawing will be adhered to in laboratory submissions.
Professor Jutras

- **336-322A FOOD PRODUCTION AND PROCESSING WASTE MANAGEMENT.** (3 Credits; 2 lectures and one 2-hr. lab.). (Offered in alternate years). Characteristics of waste; storage, transport and disposal, treatment processes, aspects of pollution control.
Professor Jutras

- **336-323A PHYSICAL PROPERTIES OF BIOLOGICAL MATERIALS.** (3 Credits; 2 lectures and one 2-hr. lab. Prerequisite: 336-341B). (Offered in alternate years). An engineering analysis of the structure, physical attributes, mechanical and rheological properties of biological materials, emphasizing the relationship of these properties to production and processing of agricultural products and food. Mathematical models considering size, shape, volume, surface area, density, quasistatic and dynamic viscoelastic behaviour; non-Newtonian fluid models; optical properties; behaviour of granular materials.
Professor Norris

336-325A FOOD ENGINEERING I. (3 credits; 3 lectures and one 3-hr. lab.). Heat and mass transfer, enthalpy and mass balances, sterilizing, freezing, fluid flow, pipes, steam, refrigeration, environmental and automatic control, plant management, pumps and valves.
Professor Kok

336-326B FOOD ENGINEERING II. (3 credits; 3 lectures and one 3-hr. lab.). Food materials handling, differential contact processes, absorption, distilation, extraction, evaporation, drying filtration, centrifugation.
Professor Kok

336-341B STRENGTH OF MATERIALS. (4 Credits; 3 lectures and one 3-hr. lab.; Prerequisite: 336-210A). Stress, strain, resilience, elastic and plastic properties of materials; bending momentand shear force diagrams; bending and shear stress; deflections; simple, fixed and continuous beams, torsion and helical springs, reinforced concrete beams; columns, bending and direct stress; general case of plane stress; Mohr's circle.
Mr. Perraton

• **336-411A OFF-ROAD POWER MACHINERY.** (3 Credits; 2 lectures and one 3-hr. lab.; Prerequisite 336-211B). (Offered in alternate years). Mechanics of wheels and tracks; terrain vehicle mobility and soil trafficability; vehicle stability, steering forces and steering geometry; compression and spark ignition engines; fuels and lubricants, introduction to combustion.
Professor McKyes

336-412A AGRICULTURAL MACHINERY. (3 Credits; 3 lectures and 1 lab.). Study and analysis of machines for tillage, harvesting, crop processing and handling. Field tests, load studies, design requirements; design of machines and components for agricultural applications.
Professor Norris

• **336-413A MATERIALS HANDLING SYSTEMS.** (3 Credits; 3 lectures; Prerequisites: 360-201A and 360-203A). (Offered in alternate years). Systems and equipment for handling agricultural and food products. Introduction to work study methods and operations research.
Professor Jutras

336-416A ENGINEERING FOR LAND DEVELOPMENT. (3 Credits; 3 lectures and one 2-hr. lab. or design problems; Prerequisites: 336-214L, 336-215B and 336-305B). The engineering aspects of irrigation, drainage, erosion control and land clearing, water conservation, projects, dam and reservoir design and integrated development projects.
Professor Broughton

336-418B SOIL MECHANICS AND FOUNDATIONS. (3 Credits; 2 lectures and one 3-hr. lab.; Prerequisite: 336-341B). The exploration of subsoils, strength theories, granular and cohesive soils, foundation design, settlement calculation, consolidation, slope stability, Atterberg limits, triaxial testing, direct shear testing, compaction, soil freezing, frost heaving.
Professor McKyes

336-419A STRUCTURAL DESIGN. (3 Credits; 3 lectures and one 3-hr. lab. or design problems; Prerequisites: 336-341B, 303-213A). (Offered in alternate years). Structural Design in steel and timber; application of complete design procedures to working stress design; plastic design for ultimate loading.
Mr. Perraton

336-490D,N PROJECT. (3 Credits; 1 lecture). Presentation of oral and written reports on approved Agricultural Engineering projects. Library and laboratory research will be required.
Professor Broughton and Staff

336-504B INSTRUMENTATION AND CONTROL. (3 Credits; 1 lab. 2 conferences; Prerequisite: 336-312A or 304-281B). Principles and operation of instrument systems used for measurement and control in agricultural processes and research.
Professor Norris

• **336-511B AGRICULTURAL AND EARTHMOVING POWER MACHINERY.** (3 Credits; 2 lectures and 2 labs.; Prerequisite: 336-418B). (Offered in alternate years). Off-road vehicle design. Topics include performance characteristics, internal combustion engines analysis of power transmission devices, distribution of stresses between wheeled or tracked vehicles and soil, mobility and pull efficiency, soil cutting, earthmoving, plowing, ripping and transport, wheel and track steering geometries, vehicle morphology.
Professor McKyes

GRADUATE COURSES AVAILABLE TO SENIOR UNDERGRADUATES WITH PERMISSION OF THE INSTRUCTOR.

• **336-602B ENVIRONMENT CONTROL IN AGRICULTURAL STRUCTURES.** (3 Credits; 3 lectures and one 2-hr. lab.; Prerequisites: 305-040A, 305-246A).
Professor Jutras

336-605B FUNCTIONAL ANALYSIS OF MACHINES. (3 Credits; 3 lectures; Prerequisites: 336-211B and 336-323A).
Professor Norris

• **336-606C LAND DRAINAGE ENGINEERING.** (3 lectures). Land drainage in relation to soils and crops. Design of regional drainage systems, stability of ditches, ice problems. Design of subsurface drainage systems. Theories of flow into drain tubes. Hydraulics of wells. Drainage of irrigated lands. Water table control.
Professor Broughton

336-609A HYDROLOGY. (2 lectures, evennumbered years). A fundamental course in Hydrology. Topics covered include: the interrelationships between precipitation, interception, infiltration, evapo-transpiration, and surface runoff; analysis of precipitation and streamflow data; use of hydrographs; hydraulics of groundwater and wells; use and replenishment of groundwater; evaporation and transpiration; irrigation water requirements.
Professor Broughton

The following courses to be taken with the Faculty of Engineering, McGill Campus. (See Faculty of Engineering Announcement for descriptions.)

304-281B ELECTRIC POWER. (3 credits; 3 lectures).

305-240B THERMODYNAMICS I. (3 Credits; 3 lectures and 1 hr. problem).

305-346B HEAT TRANSFER. (3 Credits; 3 lectures and 1 hr. problem).

305-362B MECHANICAL LABORATORY 1 H. (2 credits; 3 hr. lab.).

5.5 PHYSICS

338-112A INTRODUCTORY PHYSICS I. (3 Credits; 3 lectures and one 2-hr. lab.). Accelerated motion. Newton's Laws. Force, work and energy, power; momentum. Conservation principles. Circular motion. Simple harmonic motion. Waves and sound. Gases and gas laws.
Professor Douglas

338-114B INTRODUCTORY PHYSICS II. (3 Credits; 3 lectures and one 2-hr. lab.). Electric and magnetic properties of matter: electrostatics, electric currents, the link between electric and magnetic phenomena. Matter on the smallest scale: Bohr atom, quantum effects, the nucleus, radioactivity.
Professor Douglas

338-201A INTRODUCTORY METEOROLOGY. (3 Credits; 3 lectures). The atmosphere—its properties (structure and motion), and thermodynamics (stability, dry and moist). Clouds and precipitation. Air masses and fronts. Radiation and the global radiation budget; large-scale wind systems.
Professor Douglas

338-301B BIOTHERMODYNAMICS. (3 Credits; 3 lectures and 1 conference). The laws of thermodynamics and their application to living systems, including enzyme reactions; introduction to concepts of irreversible thermodynamics; applications of information theory to biological world; diffusion and transport phenomena.
Professor Barthakur

338-303A ADVANCES IN ATOMIC AND NUCLEAR SCIENCE. (3 credits; 3 lectures and 1 conference). Contributions of the 20th century physical sciences towards understanding and investigation of atoms, molecules and nuclei. Classical and quantum-mechanical models. Interaction of matter and radiation. Natural and artificial radioactivity.
Professor Schuepp

338-308B BIOMETEOROLOGY. (3 Credits; 3 lectures and 1 conference; Prerequisite: 338-201A). (Offered in alternate years). Radiative, convective and evaporative energy exchange on the microscale. Applications to ground, crop and forest, to individual members of the plant/forest community, and to animals. Plants and animals as radiators, convectors, evaporators. Hazards (heat loads, frost, etc.). Growing-degree-days and other integrative indicators.
Professor Douglas and Staff

• **338-404B RADIATION BIOPHYSICS.** (3 Credits; 3 lectures). (Offered in alternate years). Electromagnetic radiation, interaction of radiation with matter; radiation dosimetry; biological effects of ionizing radiation, target theory; principles of radiation protection; bioluminescence; biological action of light; x-ray diffraction of protein of protein and nucleic acids. (This is intended to be an interdisciplinary course, with some lectures supplied by the Biologists.)
Professor Schuepp and Guest Lecturers

338-405B TRACER TECHNIQUES. (3 Credits; 3 lectures and one 3-hr. lab.; Prerequisite: 338-303A or equivalent). Operation and theory of various radiation detectors; ionization chambers, G-M counter, proportional counter, solid and liquid scintillation counters, and autoradiography, counting statistics, measurements of environmental radioactivity; practice of radiological safety.
Professor Barthakur

5.6 AGRONOMY

340-331A CEREAL CROPS. (3 Credits; 3 lectures and 1 3-hr. lab. period. Prerequisite: 367-211A) Cereal crops (small grains, corn, etc.), including historical development, economic importance, botanical relationships, geographical distribution of types and cultivars; cultural practices in cereal crop production; quality factors associated with grading, processing and utilization of cereal crop products.
Professor Klinck

340-332B INDUSTRIAL CROPS. (3 Credits; 3 lectures and 1 3-hr. lab. Prerequisite: 367-211A). A study of temperate and subtropical crops grown for oil, fibre, sugar and other industrial products. Attention is given to historical development and economic importance, botanical types and culitvars, cultural practices, quality factors, grading processing and utilization.
Dr. Khayrallah

340-333A FORAGE CROPS. (3 Credits; 3 lectures and 1 3-hr. lab. Prerequisite: 367-211A). The ecology, quality, physiology and production of the important forage species of Eastern Canada. The scientific basis for modern management and

utilization practices is carefully examined. Winter survival, seed production and conservation are considered. Laboratories are mainly devoted to a morphological study of our major forage species.
Professor Coulman

340-350C EXPERIMENTAL METHODS IN AGRONOMY. (2 Credits; Summer session; Prerequisite 367-211A). Handling of experimental plant materials in Agronomy. Practice in preparation and establishment of research plots in the field and in controlled environment rooms, recording and analysing data from crop measurements, harvesting and processing research materials, crop hybridization, preparation of reports.
Professor Klinck and Staff

340-434B WEED BIOLOGY AND CONTROL. (3 Credits; 3 lectures and 1 3-hr. lab. Prerequisite: 367-211A). A study of the biology of undesirable vegetation—weeds—as related to the principles of prevention and physical, biological, managerial and chemical control. Emphasis is placed on the environmental impact of the different methods of weed control.
Professor Watson

340-435B PLANT BREEDING. (3 Credits; 3 lectures and 1 2-hr. lab. Prerequisite: 367-211A and 356-204A,B and 356-205A,B). Reproduction of cultivated plants. Variability and heritability. Breeding methods for self and cross pollinated crops. Polyploidy, interspecific hybridization, mutation breeding and breeding for pest resistance. Laboratories will involve students in discussions of recent literature.
Professor Coulman

340-439B FIELD MANAGEMENT. (3 Credits; 3 lectures and 1 3-hr. lab. Prerequisite: 367-211A). Application of soil science and plant sciences to crop production. Limiting factors to crop yields and treatments to overcome limitations. Use of fertilizers and manures, herbicides, crop rotation, tillage, drainage and irrigation, etc. to overcome limitations and to conserve soil productivity.
Dr. Khayrallah

340-440A SEED DEVELOPMENT, PRODUCTION AND ANALYSIS. (3 Credits; 2 lectures and one 3-hr. lab. Prerequisite: 367-211A). (Offered in alternate years). The development and life processes of seeds in relation to seed production, processing and storage. A study is made of seed characteristics and their utilization in seed separation, analysis and grading. Attention is given to seed marketing services, seed certification systems and seed laws.
Professor Klinck

340-490D,N PROJECTS. (3 Credits; 1 lecture). Directed study on an approved problem, requiring both oral and written presentation. U2 and U3 students must attend all oral presentations.
Professor Coulman

5.7 ANIMAL SCIENCE

342-250A PRINCIPLES OF ANIMAL SCIENCE. (3 Credits; 3 lectures and one 2-hr. lab.) Introduction to the scientific principles underlying the livestock and poultry industries. Emphasis will be placed on the breeding, physiology and nutrition of animals raised for the production of food and fibre.
Professors Downey, Donefer and Moxley

342-301B PRINCIPLES OF ANIMAL BREEDING. (3 Credits; 3 lectures and one 2-hr. lab.; Prerequisites: 356-204A,B and 356-205A,B and 360-201A,B.) The qualitative and quantitative aspects of genetics as they apply to the economic improvement of domestic mammals and birds. Areas covered include animal domestication, animal cytology, mendelian traits of economic importance, principles of population genetics, statistical tools to describe populations, environmental effects, selection and mating systems.
Professors, Moxley, Hayes and Buckland

342-312B ANIMAL PATHOLOGY. (3 Credits; 2 lectures and one 2-hr. conference.). An introductory course of Animal Pathology. Includes discussion of causative agents, the development of the disease process, degenerative changes, protective mechanisms, factors influencing spread of disease and the control of disease.
Professor Downey

342-323A MAMMALIAN PHYSIOLOGY. (4 Credits; 3 lectures and one 3-hr. lab.; Prerequisite: 344-202B). A study of the organization, functions and regulation of various organ systems in mammals. The nervous, endocrine, muscular, cardiovascular, respiratory, urinary, digestive and reproductive systems are discussed.
Professor Laguë

342-324A ANIMAL REPRODUCTION. (3 Credits; 2 lectures and one 3-hr. lab.; Prerequisites: 342-250A and 332-211A. Co-requisite 342-323A). A comprehensive study of reproduction in domestic animals integrated with management techniques to improve reproductive efficiency. Laboratory training will include anatomy, semen collectionand evaluation, estrus detection and control, artificial insemination and embryo transfer.
Professors Sanford and Downey

342-330A FUNDAMENTALS OF NUTRITION. (3 Credits; 3 lectures; Prerequisites: 332-211A, 332-212A and 332-234B). A discussion of the nutrients; water, carbohydrates, lipids, proteins, minerals and vitamins, with particular emphasis

on their functions in and essentially for the animal organism.
Professor Touchburn

342-424B METABOLIC ENDOCRINOLOGY. (3 Credits; 3 lectures and one 3-hr. lab.; Prerequisite: 342-323A). A detailed study of the endocrine system and its role in the maintenance of homeostasis in higher vertebrates, including the endocrine regulation of energy balance.
Professor Laguë

342-433B ANIMAL NUTRITION. (3 Credits; 2 lectures and one 2-hr. lab.; Prerequisites: 342-250A and 342-330A). Critical discussion of nutrient utilization by farm animals, an assessment of nutritive value of feeds. Recent developments in nutritional manipulation are discussed.
Professor Phillip and Staff

342-450A DAIRY CATTLE PRODUCTION. (3 Credits; 3 lectures and one 2-hr. lab. Prerequisite: 342-250A). The application of biological principles of genetics, physiology, nutrition and pathology as well as principles of economics and engineering. The integration of these principles, through management, for the maximum production efficiency of milk and meat by dairy cattle. Recent developments in livestock production will be emphasized. Trips to dairy farms and related enterprises will comprise part of the laboratory work.
Professor Block

342-452B BEEF CATTLE AND SHEEP PRODUCTION. (3 Credits; 3 lectures and one 2-hr. lab. Prerequisite: 342-250A). The application of biological principles of genetics, physiology, nutrition and pathology as well as principles of economics and engineering. The integration of these principles, through management, for the maximum production efficiency of beef and sheep. Trips to beef and sheep farms and related enterprises will comprise part of the laboratory work.
Mr. Garino

342-454B SWINE PRODUCTION. (3 Credits; 3 lectures and one 2-hr. lab. Prerequisite: 342-250A). The application of biological principles of genetics, physiology, nutrition and pathology as well as principles of economics and engineering. The integration of these principles, through management, for the maximum production efficiency of swine. Trips to swine farms and related enterprises will comprise part of the laboratory work.
Professor Chavez

342-456A POULTRY PRODUCTION. (3 Credits; 3 lectures and one 2-hr. lab. Prerequisite: 342-250A). The application of biological principles of genetics, physiology, nutrition and pathology, as well as principles of economics and engineering and the integration of these principles, through management, for the maximum production efficiency of poultry meat and eggs. Trips to poultry farms and related enterprises will comprise part of the laboratory work.
Professor Buckland

342-490D,N PROJECT IN ANIMAL SCIENCE. (3 Credits). A project to be completed under the supervision of a staff member of the Department of Animal Science. An agreement between student and the involved staff member must be reached prior to registration.
Professor Ng-Kwai-Hang

342-495D,N SEMINAR. (2 Credits; 1 lecture and 1 lab.). Instruction on the preparation, presentation and discussion of critical reviews of topics important to Animal Agriculture to be followed by student presentation of above reviews.
Professor Touchburn

Graduate courses available to undergraduates

342-603A PHYSIOLOGICAL GENETICS OF DOMESTIC ANIMALS. (3 Credits). (Offered in alternate years).

342-604A POPULATION GENETICS IN ANIMALS. (3 Credits). (Offered in alternate years).

342-605B ESTIMATION OF GENETIC PARAMETERS. (3 Credits). (Offered in alternate years).

342-606B SELECTION INDEX AND ANIMAL IMPROVEMENT. (3 Credits). (Offered in alternate years).

342-607A LINEAR MODELS IN AGRICULTURAL RESEARCH. (3 Credits).

342-633A PROTEIN NUTRITION. (3 Credits).

342-634B ENERGY IN NUTRITION. (3 Credits).

342-635B VITAMIN AND MINERAL NUTRITION. (3 Credits).

342-651A CARBOHYDRATE AND LIPID METABOLISM IN ANIMALS. (3 Credits).

342-652B PROTEIN METABOLISM IN ANIMALS. (3 Credits).

5.8 BIOLOGY

344-120A GENERAL BIOLOGY. (3 Credits; 3 lectures, 1 lab.). The basis of life in terms of structures and processes; the cell, tissues, organs, systems, organisms, societies; plant and animal structure, common functions of metabolism, nutrition, growth, perception, reproduction; introduction to embryology, ecology, genetics, evolution. Higher animals and plants are emphasized.

344-200A BIOLOGY OF ORGANISMS I. (3 Credits; 3 lectures and 1 lab.). The major taxonomic divisions of living organisms; the Protozoa with special reference to parasitic forms; animal embryology; a survey of the structure and biology of the major phyla, with emphasis on animal parasites and entomology.
Professor McFarlane and Staff

344-201B BIOLOGY OF ORGANISMS II. (3 Credits; 3 lectures and 1 lab.). Comparative evolutionary review of the plant kingdom, excluding the angiosperms, except for embryology and seed germination. Plant evolution, including some fossil genera, continental drift sequential evolution and telome theory. Pollination as a case study of plant evolution.
Professor Brouillet and Staff

344-202B CELLULAR BIOLOGY. (3 Credits; 4 lectures). Cellular biology in procaryotic and eucaryotic cells, including their interaction with viruses. Structure, function and replication of theoretical cell types with the emphasis on structure and structurally related function. Some examples of specialized cells are then provided to illustrate some of the differences between cell types.
Staff

344-205B PRINCIPLES OF ECOLOGY. (3 Credits; 2 lectures and 1 conference). The interactions of organisms and the physical environment. Ecological principles will be discussed at the level of the individual, the population and the community.
Professors Hill, Knowles and Bider

344-306B BIOLOGICAL INSTRUMENTATION. (3 Credits; two 3-hr. labs.). Physical and chemical methods applied to biology including theory and practice of modern instrumentation as applied to pH, chromatography, spectroscopy, centrifugation, radioactivity and electrophoresis.
Professors Ingram and Peterson

344-495D,N ENVIRONMENTAL BIOLOGY SEMINAR. (2 Credits; 1 lecture). Presentation of papers on, and discussion of, topics from the field of Environmental Biology.
Professor Lewis

5.9 BOTANY

346-252B PLANT ANATOMY AND HISTOLOGY. (2 Credits; 2 lectures and one 2-hr. lab.). A detailed study of cells, cell division, tissues and their development, and the general anatomy of vascular plants.
Professor Peterson

346-353B PLANT PHYSIOLOGY. (4 Credits; 3 lectures and one 3-hr. lab.). Respiration, photosynthesis, mineral nutrition, water relations, translocation of solutes and plant development.
Professor Pelletier

346-355A,B SPECIAL TOPIC IN BOTANICAL SCIENCES. (2 Credits; 1 conference). A course of independent study by the student with the guidance of a person of recognized competence in the general area of the chosen topic.
Staff

346-356A SYSTEMATIC BOTANY. (4 Credits, 2 lectures, 1 3-hr. lab, plus a 5 day field week, held the week preceding the start of classes). Principles of classification and identification of vascular plants with special emphasis on those families of economic and practical importance; also an introduction to modern taxonomic methods. Field trips.
Professor Brouillet

346-451A PLANT ECOLOGY. (3 Credits; 3 lectures and 1 3-hr. lab.). A study of the major vegetation units; the influence of environmental factors on the evolution, distribution, and succession of plant communities; and on the distribution, form and function of plant species. Methods of ecological analyses.
Professor Watson

346-454B PLANT MORPHOLOGY. (3 Credits; 3 lectures and 1 lab; Prerequisite: 344-201B or equivalent). (Offered in alternate years). A comparative study of plant structure and reproduction in algae, fungi, bryophytes and vascular plants emphasizing both fossil and living groups. Laboratory attention will be given to preserved, living and fossil material of the plant groups discussed in lectures.
Professor Brouillet

346-455A SPECIAL TOPIC IN THE BOTANICAL SCIENCES. (2 Credits; 1 conference). A course of independent study by the student with the guidance of a person of recognized competence in the general area of the chosen topic.
Staff

346-490D,N PROJECT. (3 Credits; 1 lecture and equivalent 1 3-hr. lab.). Each student is assigned a botanical problem entailing individual investigation, preparation of report in publication form, and oral presentation of a scientific paper.
Staff

346-496D,N SEMINAR. (2 Credits; 1 lecture). (Plant Pathology and Botany). Written and oral presentation of critical reviews of important topics and current research articles in Plant Pathology and Botany for group discussion.
Staff

CERTAIN GRADUATE COURSES ARE AVAILABLE TO UNDERGRADUATES. PLEASE CONSULT THE GRADUATE ANNOUNCEMENT.

5.10 ENGLISH

348-122A,B ENGLISH AS A SECOND LANGUAGE. (3 Credits; 3 lectures). A basic course for non-Anglophones, intended to provide familiarity with the standard methods, style, language and conventions of scientific English, written and spoken. As far as possible, instruction will be individualized, and related to student's particular fields of study.
Mr. Godfrey

348-310B STUDIES IN THE MASS MEDIA. (3 Credits; 3 lectures). An investigation of the modern media and their impact on our lives. The course will look at the rise of the media and their main areas of influence—news, advertising, public opinion and popular culture—with emphasis on their use and abuse of language.
Mr. Godfrey

348-330A TECHNICAL AND RESEARCH WRITING. (3 Credits; 3 lectures). A practical course in scientific writing with emphasis on basic writing competence and the techniques of clear exposition. In addition, study will be made of certain scientific articles and essays and the means by which they stimulate interest and attention.
Mr. Godfrey

348-343A THE SHORT STORY. (3 Credits; 3 lectures). A study and discussion of representative short stories with particular reference to their theme and techniques.
Mr. Godfrey

5.11 ZOOLOGY

349-306A HISTOLOGICAL TECHNIQUES IN ZOOLOGY. (3 Credits; 1 lecture, 1 3-hr. lab. and project). A practical course in the use of a variety of animal tissue techniques. Priority given to students who require this course for their major.
Professor McFarlane

349-307A NATURAL HISTORY OF THE VERTEBRATES. (3 Credits; lectures and modules). (Offered in alternate years). Review of higher taxonomic groups of vertebrates and prochordates, emphasizing diagnostic characters evolution and distribution.
Professor Bider

• **349-308B COMPARATIVE MORPHOLOGY OF THE VERTEBRATES.** (3 Credits; 2 lectures 1 3-hr. lab. and project). (Offered in alternate years). Morphological adaptations, and evolution, of vertebrates. Differences between vertebrates and invertebrates; embryology, skeletal, muscular, digestive, circulatory, nervous, sensory, endocrine and tegumentary systems.
Professor Lewis

349-311B ETHOLOGY. (3 Credits; 2 lectures, 1 3-hr. lab.). Invertebrate and vertebrate behavior; innate behaviour, learning, motivation, agonistic behavior, rhythms, social organization and communication.
Professors Stewart and Titman

• **349-312A PRINCIPLES OF SYSTEMATIC ZOOLOGY I.** (3 Credits; 3 lectures, and assignments). (Offered in alternate years). Introduction to animal taxonomy; 'the New Systematics'; species concept; variation; speciation; reproductive isolation; evolution; phylogeny; phenetics: zoological nomenclature; methodology, etc.
Professors Kevan and Vickery

• **349-313B PRINCIPLES OF SYSTEMATIC ZOOLOGY II.** (3 Credits; 2 lectures, 1 conference and project; Prerequisite: 349-312A). (Offered in alternate years). Factors affecting the areal, regional and world distribution of animal groups and species, with particular reference to the post-mesozoic fauna; related aspects of evolutionary and phylogenetic theory, e.g., adaptation, mimicry, parallel and convergent evolution, "Plate Tectonics", climatic and topographical variation, dispersal.
Professors Kevan and Vickery

349-315A BIOLOGY OF INLAND WATERS I. (3 Credits; 2 lectures and 1 3-hr. lab.; Prerequisite: Any basic Botany or Zoology). Nature and history of limnology; divisions of inland waters; properties of fresh water; habitats; zones; nutrient cycles; biota; adaptations; seasonal variation; distributions; pollution; succession and evolution of fresh water environments. Includes field excursions.
Professor Lewis

349-316B BIOLOGY OF INLAND WATERS II. (3 Credits; 2 lectures and 1 3-hr. lab.; Prerequisite: 349-315A). (Offered in alternate years). Detailed examination of the biota of inland waters including systematics, identification, habitat, distribution, locomotion, food and use as indicators of pollution.
Professor Lewis

349-418A TERRESTRIAL ANIMAL ECOLOGY. (4 Credits; 2 lectures, one 3-hr. lab. and one week field laboratory prior to fall term; Prerequisite: Biology 344-205B). Advanced course in animal ecology. Study of concepts and methods in physiological, population and community ecology using case studies from land environments.
Professor Stewart

349-424A PARASITOLOGY. (3 Credits; 2 lectures and one 3-hr. lab.). Systematics, morphology, biology and ecology of parasitic protozoa, flatworms, roundworms and arthropods with emphasis on economically and medically important species.
Professor Meerovitch and Professor Rau (Institute of Parasitology)

349-490D,N PROJECT. (3 Credits; 1 lab.). A problem involving literature review and private investigation will be allotted to each student taking the course.
Professor Yule and Staff

349-491D,N PROJECT. (5 Credits; 1 lab.). Literature review, design and execution of a zoological experiment, and written and oral presentation of results.
Professor Yule and Staff

349-496D,N SEMINAR AND LITERATURE REVIEW. (3 Credits; 2 lectures). Written and oral presentation on zoological topics, editing; reviewing; information storage and retrieval; preparation of behavioural objectives, visual aids and annotated bibliographies.
Professor Hill and Staff

5.12 PARASITOLOGY

Professors at the Institute of Parasitology are prepared to supervise students doing undergraduate projects within the Faculty of Agriculture.

5.13 ENTOMOLOGY

350-330A GENERAL ENTOMOLOGY. (3 Credits; no lectures, one lab.; and project). Each student plans, in consultation with the instructor, a program from a wide range of modules. These are designed to introduce insect structure, physiology, development, systematics, evolution, ecology and control. The course stresses interrelationships, integrated pest control and information storage and retrieval.
Professor Hill

• **350-331A INSECT MORPHOLOGY I.** (3 Credits; 2 lectures, 1 lab. and project). (Offered in alternate years). Morphology of insect integument and associated organs, relating structure to function.
Professors Lewis and Kevan

• **350-332B INSECT MORPHOLOGY II.** (3 Credits; 2 lectures, 1 lab. and project; Prerequisite: 350-331A). (Offered in alternate years). Morphology of insect internal organs and sense organs. Development of insects, relating structure to function.
Professors Kevan and Lewis

• **350-350B INSECT DEVELOPMENT AND PHYSIOLOGY.** (3 Credits; 2 lectures and 1 lab. Prerequisites: 332-211A, 332-212A, 344-200A and 344-202B). (Offered in alternate years). An organismal approach to insects, emphasizing the physiology of growth and development, and the physiological relations of insects to their environment.
Professor McFarlane

350-440B SYSTEMATIC ENTOMOLOGY. (3 Credits; 1 lecture, 1 lab. and project; Normal Prerequisite: 350-330A). (Offered in alternate years). Classification of principal orders, suborders and superfamilies of insects; use of keys; collecting methods.
Professors Kevan and Vickery

350-442A ARACHNIDA AND OTHER TERRESTRIAL ARTHROPODS. (3 Credits; 3 lectures, 1 lab.; Prerequisite: 344-200A). (Offered in alternate years). Morphology, biology and systematics of land arthropods other than true insects, emphasizing those living on and in soil; e.g. parathropods, land crustaceans (spiders, mites, ticks), millipedes, centipedes, collembolans.
Professors Kevan and Hill

350-444B SOIL FAUNA ECOLOGY. (3 Credits; 3 lectures, 1 lab; Prerequisite: 344-205B). (Offered in alternate years). Animals in soil and litter, emphasizing their biology, ecology and role in soil formation and amelioration; methods of sampling, extraction, and identification.
Professors Hill and Kevan

350-446B APICULTURE. (3 Credits; 2 lectures and one lab.). Theory and practice of beekeeping. Social insects; development of social behaviour; co-evolution of flowering plants and social insects; life and behaviour of honeybees; insect pollination; honey production; properties of honey; practical beekeeping. Demonstrations and written assignments essential.
Professor Vickery

350-452A ECONOMIC ENTOMOLOGY I. (3 Credits; 3 lectures; Prerequisite: 350-330A). Non-chemical methods of pest control. Modern concepts of integrated control, pest management and legal restrictions. Biological control (predators, parasites, pathogens). Manipulation of environment and pest behaviour. Physical, cultural and genetic controls. Biochemical agencies (pheromones, sterilants and repellents).
Professor Yule

350-453B ECONOMIC ENTOMOLOGY II. (3 Credits; 3 lectures; Prerequisite: 350-330A). Survey of pest control chemicals. Development, formulation, application, hazards, effectiveness, risks of ecological side-effects and environmental contamination. Selectivity, specificity, resistance,

compatibility, safety, and conformation to acceptable legal and scientific standards.
Professor Yule

350-454A PEST INSECTS. (3 Credits; 2 lectures, 1 lab.). Current status and control of major world pests emphasizing Canadian conditions. The study of a core of representatives of taxonomic groups, their biology, economic importance and control is required of all students. Two special interest topics for each student. Recently revised information on micro-fiche package.
Professor Yule

5.14 EXTENSION METHODS

352-300B COMMUNICATIONS – EXTENSION METHODS. (3 Credits; 2 lectures and 1 2-hr. lab.). An introductory survey course in communication techniques including journalism skills (newswriting, design, etc.), strategies of change, and extension methods (meetings, panel discussions, etc.)
Staff

352-301B COMMUNITY DEVELOPMENT. (3 Credits; 2 lectures and 1 lab.). The principles and processes of area resource development will be studied by readings, lectures, group discussions and case studies. Guest lecturers from organizations and agencies involved in community resource development will be invited to participate.
Staff

5.15 FRENCH

354-200A PRACTICAL FRENCH I. (3 Credits; 3 lectures). Introductory French course for students who have not attended High School in Québec. Preparatory work for postgraduate students who intend to meet second language requirements in French.
Professor Gerols

354-201B PRACTICAL FRENCH II. (3 Credits; 3 lectures). Continuation of 354-200A.
Professor Gerols

354-300A,B TECHNICAL FRENCH. (3 Credits; 3 lectures; Prerequisite: 354-201B or equivalent). An introduction to the language of the Food Sciences. Oral practice and translation structured to meet the requirements for admission to Professional Associations in Québec, including the Ordre des Chimistes and Corporation des Diététistes.
Professor Gerols

354-305A AGRICULTURAL VOCABULARY. (3 Credits, 3 lectures; Prerequisite: 201B, or equivalent). A course designed for students in Agriculture who wish to acquire a basic technical vocabulary. This study of agricultural terminology will take place within a survey of Agriculture in French-speaking countries.
Professor Gerols

354-304B AGRICULTURE IN FRENCH CANADIAN LITERATURE. (3 Credits; 3 lectures; Prerequisite: 354-201B or equivalent). The theme of Agriculture in French Canadian Literature: A survey of the Literature of Québec and detailed study of four novels of rural life. This course is specifically designed for non-Francophone students; it will be conducted in French.
Professor Gerols

5.16 GENETICS

356-204A,B GENETICS. (3 Credits; 3 lectures). This course emphasizes classical and population genetics of animals and plants. Other topics include cytology, cytogenetics, biochemical genetics, microbial genetics and human and medical genetics.
Professors Coulman and Grant

356-205A,B GENETICS LABORATORY. (2 Credits; one 3-hr. lab. Corequisite 356-204A,B or equivalent). this course will familiarize students with the methodology, analysis and interpretation of experiments in genetics. Each student will be required to carry out a number of inheritance studies using Drosophila melanogaster. Other exercises will include simulation of genetic ratios and cytological analysis.
Professors Coulman and Grant

CERTAIN GRADUATE COURSES ARE AVAILABLE TO UNDERGRADUATES. PLEASE CONSULT THE GRADUATE ANNOUNCEMENT.

5.17 HORTICULTURE

358-335B FLORICULTURE. (3 Credits; 2 lectures and one 2-hr. lab.; Prerequisites: 346-353B and 367-211A or permission of instructor). Introduction to the production of greenhouse floricultural crops with emphasis on physiological principles underlying modern practices. Crops such as chrysanthemums, carnations, roses, poinsettias and bedding plants will be discussed. In the laboratory, students are required to grow selected crops and prepare reports.
Professor Chong

358-338A POMOLOGY SMALL FRUITS. (3 Credits; 2 lectures and 1 2-hr. lab. Prerequisites: 346-353B and 367-211A). The biology of small fruit species, and the technology of small fruit production; major aspects, significant research, recent advances.
Professor Buszard

358-339B POMOLOGY TREE FRUITS. (3 Credits; 2 lectures and 1 2-hr. lab. Prerequisite: 346-353B and 367-211A). The biology of orchard species, and the technology of tree fruit production; major aspects, significant research, recent advances.
Professor Buszard

358-421A LANDSCAPE PLANT MATERIALS. (3 Credits; 2 lectures and one 2-hr. lab.; Prerequisites: 346-356A and 367-211A or permission of instructor). Introduction to nursery practices, growth forms, and landscape use of trees, shrubs, vines and ground covers. Laboratory includes specimen collection, identification, cataloguing and description of basic materials from the landscape and from reference sources. Students are required to research and (or) report on selected topics such as propagation.
Professor Chong

358-432A VEGETABLE PRODUCTION I. (3 Credits; 2 lectures and 1 2-hr. lab. Prerequisite: 367-211A). A study of vegetable crop production and how it is influenced by cultural and/or managerial techniques. Commercial (field, greenhouse) and small scale vegetable holdings will be considered. Crops discussed will include members of the Solanaceae and Cucurbitaceae families.
Professor Stewart

358-433B VEGETABLE PRODUCTION II. (3 Credits; 2 lectures and 1 2-hr. lab; Prerequisite: 367-211A). A study of vegetable crop production and how it is influenced by cultural and/or managerial techniques. Commercial (field, greenhouse) and small scale vegetable holdings will be considered. Crops discussed will include: members of the Cruciferae, Lilaceae, and Chenopodiaceae families.
Professor Stewart

358-443A STORAGE AND HANDLING OF HORTICULTURAL CROPS. (3 Credits; 2 lectures and 1 2-hr. lab.). The post-harvest chemistry and physiology of horticultural crops as they affect quality and marketability; handling methods at and after harvest; principles and practices in precooling, storage, transportation and packaging.
Professor David

358-444B FRUIT AND VEGETABLE PROCESSING. (3 Credits; 2 lectures and 1 2-hr. lab.). The principles and practices of food processing with emphasis on canning, freezing and dehydration, survey of the newer methods of food preservation such as the use of radiation and antibiotics; quality control, grading and sanitation are discussed.
Professor David

358-495D,N SEMINAR. (2 Credits; 1 lab.).
Professor Stewart and Staff

5.18 MATHEMATICS

360-201A,B STATISTICAL METHODS I. (3 Credits; 3 lectures and 1 2-hr. lab.). Measures of central tendency and dispersion; normal, student's t, chisquare, and F distribution; estimation and testing hypotheses; analysis of variance for simple experimental designs; regression and correlation; binominal and Poisson distribution.
Professor Fanous

360-202A CALCULUS. (3 Credits; 3 lectures and 1 conference). Partial differentiation; multiple integrals; vector calculus; infinite series; applications.
Professor Barthakur

360-203A DIGITAL COMPUTING I. (3 Credits; 3 lectures, 1 2-hr. lab.). Introduction to Fortran Programming; numerical and non-numerical application of computers; computer oriented mathematics.
Professor Kok

360-205B DIFFERENTIAL EQUATIONS. (4 Credits; 4 lectures; 1 Conference Hour; Prerequisite: 360-202A or equivalent). Techniques for solution of ordinary 1st and 2nd order equations; power series solutions; systems of equations; introduction to partial differential equations; numerical techniques for solutions; applications to biological, chemical and engineering systems.
Professor Schuepp

360-206A MATHEMATICAL METHODS IN ECOLOGY. (3 Credits; 3 lectures). An introduction to mathematical tools used in building models of biological and ecological systems. These include probability theory, set theory, vector and matrix algebra, differential and difference equations.
Professors Barthakur and Schuepp

360-207A LINEAR ALGEBRA AND VECTOR ANALYSIS. (4 Credits; 4 lectures; Prerequisite: 360-203A). Basic vectors; 3-D geometry; Applications to mechanics; basic matrices; simultaneous linear equations; linear programming; linear transformations; Laplace Transformation; feedback and control systems analysis.
Mr. Perraton

360-301A NUMERICAL METHODS. (3 Credits; 3 lectures). Numerical analysis and solution of problems arising in environmental science. Linear programming. Practice and instruction on programmable desk calculators.
Professor Schuepp

360-303B DIGITAL COMPUTING II. (3 Credits; 3 lectures; Prerequisite: 360-203A). More advanced Fortran, including the use of magnetic tapes and disks. Further applications of computers in simulation, linear programming, critical path techniques.

Graduate courses available to undergraduates by permission:

360-610A,B STATISTICAL METHODS II. (3 Credits; 3 lectures and 1 2-hr. lab.).
Professor Fanous

360-612B MATHEMATICAL METHODS. (3 Credits; 3 hours to be arranged).
Professors Schuepp and Kok

360-613B TECHNIQUES OF STATISTICAL ANALYSIS. (3 Credits; 3 lectures).
Professor Fanous

5.19 MICROBIOLOGY

362-200A LABORATORY METHODS IN MICROBIOLOGY. (3 Credits; and two 3-hr. lab.). A practical application of techniques relating to morphology and physiology, enrichment, isolation and identification of selected classes of microorganisms.
Staff

362-230B THE MICROBIAL WORLD. (3 Credits; 3 lectures and one 3-hr. lab.). The occurrence and importance of microorganisms (especially bacteria) in the biosphere. Principles governing growth, death and metabolic activities of microorganisms. An introduction to the microbiology of soil, water, plants, food, man and animals.
Professor MacLeod and Staff

362-331B MICROBIAL ECOLOGY. (3 Credits; 3 lectures and one 3-hr. lab.). A detailed study of microorganisms in the animal, soil, fresh water and marine environments. Population regulation in pure and mixed cultures and in natural communities in homogeneous and discontinuous environments. Principles of biochemical ecology in relation to biodeterioration, pollution, biogeochemical cycles.
Professor Knowles and Staff

362-337D,N FRONTIERS IN MICROBIOLOGY. (1 Credit; irregular meetings). This course involves the preparation of a comprehensive term paper based on a search of the literature on a topic assigned to include an area of recent development new to the student.
Staff

- **362-338A MOLECULAR BIOLOGY OF MICROORGANISMS.** (3 Credits; 3 lectures and one 3-hr. lab.). Principles of microbial molecular biology including cell structure, growth, nutrition, intermediary metabolism, catabolic and anabolic reactions and genetics. The laboratory includes isolation, induction and assay of selected enzymes plus special individual projects to illustrate various aspects of molecular biology.
Professor Ingram and Staff

362-341B MECHANISMS OF PATHOGENICITY. (3 Credits; 2 lectures, 1 conference, one 3-hr. lab.; Prerequisite: 362-230B). (Offered in alternate years). A study of the means by which bacteria cause disease in man and animals. Includes response of host to invading bacteria, modes of action of exo- and endotoxins, modes of actions of antibiotic resistance in bacteria.
Professor Niven

362-438A IMMUNOLOGY. (3 Credits; 3 lectures). A review of the host defence mechanisms with particular reference to antigen-antibody reactions. The nature of antigens and antibodies, the mechanism of antibody formation, hypersensitivity and transplantation are discussed.
Professor Tanner

362-442A FOOD MICROBIOLOGY AND SANITATION. (3 Credits; 3 lectures and 1 3-hr. lab.). Consideration of microorganisms, and their products, of importance to the food industry. These will be discussed in terms of production of foods, preservation and processing of foods, facility sanitation and waste disposal, potential for causing food poisoning outbreaks.
Professor Idziak

362-490D,N PROJECT. (3 Credits; equiv. 2 3-hr. labs.). A project involving laboratory work. May be elected by any final year students other than Microbiology Major.
Staff

362-492D,N PROJECT. (5 Credits; equiv. 3 3-hr. labs.). A project involving laboratory work assigned each Microbiology Major student in his final year.
Staff

362-495D,N SEMINAR. (3 Credits; equivalent of 1 lecture).
Staff

Graduate courses available to undergraduates with permission:

- **362-750A BIOENERGETICS.** (3 Credits; 2 lectures). (Offered in alternate years).
Professor MacLeod

- **362-751B CELL MEMBRANES AND TRANSPORT.** (3 Credits; 2 lectures). (Offered in alternate years).
Professor MacLeod

- **362-761D SOIL MICROBIOLOGY.** (6 Credits; 2 lectures). (Offered in alternate years).
Professor Knowles

- **362-770A ENZYMOLOGY.** (3 Credits; 2 lectures). (Offered in alternate years).
Professor Ingram

• **362-771B ENZYME REGULATION AND CELLULAR ORGANIZATION.** (3 Credits; 2 lectures). (Offered in alternate years).
Professor Ingram

362-764A READING AND CONFERENCE. (3 Credits; 2 conferences). (Offered in alternate years).
Staff

362-765B READING AND CONFERENCE. (3 Credits; 2 conferences). (Offered in alternate years).
Staff

5.20 PLANT PATHOLOGY

366-301B INTRODUCTORY MYCOLOGY. (3 Credits; 2 lectures and 1 3-hr. lab.). A lecture and laboratory course dealing with elements of the biology and physiology of fungi; their cultural characteristics and the identification of selected species.

366-355A,B SPECIAL TOPIC IN PLANT PATHOLOGY. (2 Credits; 1 conference). A course of independent study by the student, guided by a plant pathologist who has specialized in the general area of the chosen topic.
Staff

366-402A GENERAL PLANT PATHOLOGY. (3 Credits; 2 lectures and 1 3-hr. lab.) A study of common diseases, with emphasis on disease expression, causation, ecology, and principles underlying plant disease control. An introduction to methods of studying plant diseases in the laboratory and field.
Professor Sackston

• **366-403B DISEASES OF FIELD AND FOREST CROPS.** (3 Credits; 2 lectures and 1 3-hr. lab.; Prerequisite: 366-402A). (Offered in alternate years). The distribution, economic importance, symptoms, causes, and principles underlying control of diseases of major field and forest crops.
Professor Sackston

366-404B DISEASES OF HORTICULTURAL CROPS. (3 Credits; 2 lectures and 1 3-hr. lab.; Prerequisite: 366-402A). (Offered in alternate years). The distribution, economic importance, symptoms, causes, and principles underlying control of diseases of major horticultural crops.
Professor Sackston

366-405A INTERMEDIATE MYCOLOGY. (3 Credits; 2 lectures and 1 3-hr. lab.). A lecture and laboratory study of the higher fungi, and others of general interest or importance, that are not dealt with in the introductory course.

366-406A VIROLOGY. (3 Credits; 2 lectures and 1 3-hr. lab.). (Offered in alternate years). A study of the viruses affecting animals, bacteria and plants, with main emphasis on the chemical and physical properties of viruses; virus infection; and virus epidemiology. Laboratory culture of viruses, their isolation, and characterization by chemical and physical methods. Priority given to students who require this course for their major.
Professor Peterson

366-490D,N PROJECT. (3 Credits; 1 lecture and 1 3-hr. lab.). Each student is assigned a plant pathological or botanical problem entailing individual investigation, preparation of a report in publication form, and oral presentation of a scientific paper.
Staff

366-496D,N SEMINAR. (2 Credits; 1 lecture). Written and oral presentation of critical reviews of important topics and current research articles for group discussion.
Professor Sackston and Staff

Certain graduate courses are available to undergraduates. Please consult the graduate announcement.

They are listed in the Section 5.21 PLANT SCIENCE (367).

5.21 PLANT SCIENCE

367-211A PRINCIPLES OF PLANT SCIENCE. (3 Credits; 3 lectures and one 2-hr. lab.). A study of major world crop species with emphasis on their adaptation and distribution in relation to the economic botany of the plants.
Professor Steppler

Certain graduate courses are available to undergraduates. Please consult the graduate announcement.

5.22 PSYCHOLOGY

368-301A PSYCHOLOGY. (3 Credits; 2 lectures and one 3-hr. conference). A study of the general characteristics of physical, social, emotional and intellectual development, the psychology of learning, and the growth and development of personality.

368-350B HUMAN SEXUAL DEVELOPMENT. (3 Credits; 2 lectures and one 2-hr. conference). (Offered in alternate years). An analysis of available research related to human sexuality from the areas of developmental psychology, sociology, and medicine. The course will consider social issues associated with sexuality from an historical and psychosociological viewpoint.

5.23 SOCIOLOGY

370-243B THE STUDY OF HUMAN BEHAVIOUR. (3 Credits; 3 lectures). An introduction to sociology and to the methods of survey research. The nature of human interaction. Language and communication. Socialization. The self and others. The practice of survey research. Class preparation of a social survey on a selected topic, including: research design, sampling, data collection and analysis.
Professor Chevrier

370-242A SOCIAL PROCESSES AND SOCIAL INSTITUTIONS. (3 Credits; 3 lectures) Culture and society. Social structure: the macro level. Stratification, classes and mobility. Social control and maintenance of order. Bureaucracy and modern organizations. Power, authority and the political order. The realm of ideas: education, science, religion and ideologies. Social change and the future of society.
Professor Chevrier

370-341A THE URBAN COMMUNITY. (3 Credits; 3 lectures; Prerequisite: Introductory Sociology). Population phenomena and their implications for the organization of society. Human ecology. The structure of urban communities in industrial and developing countries. Urban planning. City government. Social institutions in the urban setting.
Professor Chevrier

370-360B RURAL SOCIOLOGY. (3 Credits; 3 lectures; Prerequisite: Introductory Sociology). Settlement patterns and their social significance. The major social systems of the rural community. Farms and Farmers. Government policies. Rural life in traditional societies and in urbanized societies.
Professor Chevrier

5.24 SOIL SCIENCE

372-210A PRINCIPLES OF SOIL SCIENCE. (3 Credits; 3 lectures and one 3-hr. lab.). Origin, development and classification of soils, chemical and physical properties related to crop production, soil conservation and land use.
Professor Mackenzie

372-250B GEOLOGY AND GEOMORPHOLOGY. (3 Credits; 3 lectures and one 3-hr. lab.). (Offered in alternate years). Geology, petrology and stratigraphy of the common igneous, sedimentary and metamorphic rocks. Principles of geomorphology related to landscape features and their interpretation. Weathering, mass wasting, erosion and deposition.
Professor Millette

372-315B SOIL FERTILITY AND FERTILIZERS. (3 credits; 3 lectures and one lab.; Prerequisite 372-210A or permission of instructor). Plant nutrients in the soil, influence of soil properties on nutrient absorption and plant growth, use of organic and inorganic fertilizers.
Professor MacKenzie

372-321A PRINCIPLES OF SOIL RATING. (3 Credits; 3 lectures). A study of soil as a main constraint in its utilization by man for agriculture, forestry, recreation, wildlife, urban development, industrialization, engineering projects, social and economic aspects. Review and evaluation of various systems of rating soils for the aforementioned uses.
Professor Millette

372-325B PRINCIPLES OF LAND PLANNING. (2 Credits; one 2-hr. lab.). A study of the principles involved in land planning. Includes an historical review, discussion of ecological, social, economic, political and legal factors involved in making decisions for the best and most appropriate use of land. Study of specific cases, field trips or visits or group discussion.
Professor Millette

372-331B SOIL PHYSICS. (3 Credits; 3 lectures and one 3-hr. lab.). Soil structure; fluxes of water, heat, gases and solids in soils; physical properties and plant growth; applications to soil dynamics.
Professor Mehuys

372-410B SOIL CHEMISTRY. (3 credits; 3 lectures and one lab.; Prerequisite 372-210A or permission of instructor). Chemical composition of soils, pH, ion exchange; organic matter — composition and transformations, chemistry of soil pollution. (1981 and alternate years).
Professor Mackenzie

372-420A SOIL SURVEY. (3 Credits; lectures and two weeks of soil mapping before term begins). Technique of taking soil descriptions and establishing mapping units. Preparation of soil, land use and other interpretation maps. Interpretation of aerial photographs.
Professor Millette

372-491A PROJECT I. (3 Credits). Selection of research problem, formulation of hypothesis, elaboration of objectives, outline of the method of approach and of the experimental techniques, major review of literature pertaining to subject investigated. All work performed in frequent consultation with research director.
Staff

372-493B PROJECT II. (3 Credits). Execution of experimental work, preparation of report containing accomplishments from Project I, plus discussion,

conclusion and summary concerning experimental results. Oral presentation of completed report. All work performed in frequent consultation with research director.
Staff

372-496D SEMINAR. (2 Credits; 1 lecture). Discussions of selected topics in Soil Science.
Staff

5.25 WOODLAND RESOURCES

374-200B FOREST RESOURCES. (3 Credits: 3 lectures and project). A survey of the contribution of the forest resource to the national economy. An overview of world forests, the history and development of forestry, forest influences, forest industry, management, harvesting methods, and mechanization systems. Discussions of research, economics, multiple use and environmental forestry practices with guest lecturers.
Professor Jones

374-210C METHODS OF ENVIRONMENTAL INTERPRETATION. (3 Credits; Summer session 3 weeks; 2-hr. lecture and field trip each day). For people interested in conducting effective field study trips; organization and operation of studies, class preparation, field methods, basic information and sources, functions of tour guides, utilization of different study areas, special problems and possibilities for follow-up class work. Field work at the Morgan Arboretum.
Professor Jones

374-330A PRIVATE FORESTRY. (3 Credits; 3 lectures and one 3-hr. lab.). Trees and forests of eastern Canada; forest ecology; products; multiple use potentials; silviculture, management, and marketing; diverse objectives of forest owners, management alternatives; relation to agriculture; analysis of management problems; present and future socio-economic significance of this segment of land resource.
Professor MacArthur

374-440B SILVICULTURE. (3 Credits; 2 lectures; 1 conference; Desirable Prerequisites: 346-451A, 374-330A; or consent of instructor). A generalized treatment of applied forest ecology and current silvicultural practices with emphasis on Eastern Canadian conditions. The principles of regeneration, nursery practice, planting, tending and harvesting of natural and artificial stands.
Professor MacArthur

5.26 RENEWABLE RESOURCES DEVELOPMENT

375-201B RENEWABLE RESOURCES. (3 Credits; lectures and modules). The production, exploitation, and utilization of agricultural, forestry, fisheries and wildlife resources. The geography of there sources as well as the populations which exploit them and the markets which consume them.
Professor Bider

375-310A PHOTOGRAMMETRY AND PHOTOINTERPRETATION. (2 Credits; 1 lecture, one 3-hr. lab.). The use of air photographs and the principles of measurements from airphotographs (photogrammetry) will be examined. General methods of photointerpretation for renewable resource uses will be studied. Emphasis will be placed on acquiring practical skills in photogrammetry and photointerpretation.
Mr. E. Thompson

375-333A PHYSICAL AND BIOLOGICAL ASPECTS OF POLLUTION. (3 Credits; 3 lectures). The environmental contaminants which cause pollution; sources, amounts and transport of pollutants in water, air and soil; waste management.
Professor Mehuys

375-401A FISHERIES AND WILDLIFE MANAGEMENT. (4 Credits; 3 lectures, one 2-hr. lab and one week field laboratory prior to fall term). Principles of fisheries and wildlife management are considered and current practices of research and management are discussed.
Professors Titman, Doucet and Bider

375-402B CONSERVATION. (3 Credits; 3 lectures). An ecological, economic, ethical and political evaluation of man's effect on his environment and the ultimate values of his ingenuity and present rate of progress.
Professor Bider

375-410B WILDLIFE ECOLOGY. (3 Credits; 3 lectures, assignments, and occasional field trips). Principles of animal ecology as they relate particularly to North American birds and mammals. Topics covered include species distribution, population dynamics, predation, geographic speciation, habitat selection and social behaviour.
Professor Titman

375-411B RECREATION RESOURCE MANAGEMENT. (3 Credits; 3 lectures). Outdoor recreation management principles as related to renewable resources, needs, programs, opportunities, policies and administration in the public and private sectors, economic aspects.
Professor Jones

- **375-414A POLICY AND POLITICS OF RENEWABLE RESOURCES DEVELOPMENT.** (3 Credits; 2 lectures one conference). This course will answer the following questions: How are policies made and

implemented? Who makes policy decisions? How are desirable goals achieved within the political system?

375-415A LAW AND THE PROTECTION OF FAUNA AND FLORA. (2 Credits; 2 lectures). A study of the various federal, provincial and municipal laws affecting wildlife habitat. Topics include: laws to protect wild birds and animals; the regulation of hunting; legal protection of trees and flowers, sanctuaries, reserves, parks; techniques of acquiring and financing desirable land, property owner rights.
Messrs. Carswell and Guthrie

375-420A TOPICS IN ORNITHOLOGY. (3 Credits; 3 lectures and occasional field trips; Prerequisite: 349-307A or permission of instructor). Taxonomic relationships and evolution of birds are outlined. Reproduction, migration and population processes of North American birds are examined.
Professor Titman

375-437B ASSESSING ENVIRONMENTAL IMPACT. (2 Credits; 2 lectures). The course will be divided into two parts. The theories and procedures of various methods of assessing environmental impact. An examination of the environmental impact statements of programs and projects already in existence to examine the accuracy with which they were able to predict consequences and attenuate undesirable effects.
Professor Doucet

375-445A SPECIAL TOPICS IN RENEWABLE RESOURCES. (2 Credits). Students will pursue topics that are not otherwise available in formal courses. An individualized course of studies will be followed under supervision of a member of staff qualified in the appropriate discipline or area selected by the student.
Staff

375-446B Same description as 375-445A.

375-450A,B SPECIAL TOPICS IN RENEWABLE RESOURCES DEVELOPMENT. (2 Credits). Students will pursue topics that are not otherwise available in formal courses. An individualized course of studies will be followed under the supervision of a member of staff qualified in the appropriate discipline or area.
Staff

375-451A TOPICS IN REGIONAL LANDSCAPE DEVELOPMENT. (3 Credits; Conference). Students will pursue topics that are not otherwise available in formal courses. Projects will be selected by the students for an interdisciplinary group approach to problem solving—applied through research, analysis of information, and development of concepts. The design process will be applied to actual landscape problems in the region about the Campus.

375-452B TOPICS IN SITE LANDSCAPE DEVELOPMENT. (3 Credits). Individual projects will be selected by the students for an interdisciplinary group approach to problem solving—applied through research, analysis of information and development of plans. Based on available regional landscape resource information, the design process will be applied to solve problems on actual site landscapes on or near the campus.

475-491D,N SEMINAR. (2 Credits). Includes basic lectures on synthesis and interpretation of multifaceted subjects; preparation and publication of one semi-technical article; participation in two oral presentations of technical subjects all under the supervision of academic or staff adviser.
Staff

375-496D,N PROJECT I. (3 Credits). Development of research techniques through selection of problem, formulation of hypotheses and objectives, research design, review of pertinent literature, experimental work, discussion and conclusion of results with oral presentation of completed report, all in consultation with research director.
Staff

375-497D,N PROJECT II. (5 Credits). Same as 375-496D with a more elaborate research program.
Staff

5.27 FOODS

376-200A PRINCIPLES OF FOOD SCIENCE. (3 Credits, 3 lectures and 1 lab.). An introduction to the effects of food composition on quality, safety, processing, nutritive value and acceptability. Evolution of food processing methods; carbohydrate, lipid and protein based food properties; food additives and regulations are dealt with. The laboratory emphasis and recognition of food quality standards.
Ms. Lapsley

376-201B APPLICATION OF FOOD SCIENCE PRINCIPLES. (3 Credits; 3 lectures and 1 lab.; Prerequisite, 376-200A). A more intensive study of the chemical and physical properties of food mixtures; their production, processing, purchasing and use as meal components. Laboratory emphasis is on food formula experimentation and product assessment by sensory or instrumental evaluation.
Ms. Lapsley

376-251B FOOD CHEMISTRY. (3 Credits; 3 lectures and 1 3-hr. lab.). A study of the important food constituents such as water, lipids, protein, carbohydrates, minerals, flavoring compounds and vitamins in raw foods and subsequent changes,

beneficial and deleterious, which occur during processing storage.
Professor Smyrl

376-340A CHEMISTRY OF FOOD PRODUCTS I. (3 Credits; 3 lectures and 1 3-hr. lab.; Prerequisite: 332-211A and 332-212A). A study of the composition, chemistry and technology of milk, meat and eggs. Analytical methods, processing procedures and market quality.
Professor Beveridge

376-341B CHEMISTRY OF FOOD PRODUCTS II. (3 Credits; 3 lectures and 1 3-hr. lab.; Prerequisite: 332-211A and 332-212A). A study of the composition, chemistry and technology of selected food products derived from cereals, oil seeds, sugar cane and sugar beet, sea weed and spice plants. Analytical methods, processing procedures and market quality.
Professor Beveridge

376-350B PRINCIPLES OF FOOD QUALITY ASSURANCE. (3 Credits; 3 lectures; 3 hour laboratory). Prequisite 360-201A. The principles of quality assurance and theories of quality control to produce and market uniform and safe food products. A systematic study and applications of food regulations. An introduction to statistical quality control procedures. The fundamentals of instrumental and sensory evaluation of food quality attributes.
Professors Beveridge, Idziak, Lapsley

376-413B PRODUCT DEVELOPMENT. (3 Credits; 3 lectures and 1 lab.). (Offered in alternate years). Representatives from food industry will present research procedures used to develop new products. Students will prepare a report on the development a new product, incorporating an analysis and evaluation of the production, processing equipment and sanitation requirements and a summary of consumer acceptance and market feasibility of the product.
Professors Idziak and Fuller

376-414A ADVANCED FOOD PROCESSING. (3 Credits; 3 lectures andone 3 hr. lab.). The role of water in foods. Topics include: water activity and its importance in food stability, concentration processes for liquid foods, drying (air, spray, freeze, etc.), intermediate moisture foods, and packaging. Laboratories will involve Pilot Plant and laboratory experiments.
Professor Smyrl

5.28 FOOD AND CONSUMER SCIENCES

377-420D DIRECTED STUDIES IN FOOD SCIENCE. (3 Credits). A course of private study undertaken with and under the direction of a staff member, usually in the Food and Consumer Sciences Division. The course involves the preparation of two term papers based on a search of the literature on topics in the field of food science new to the students.
Staff

377-421A,B DIRECTED STUDIES IN FOOD SCIENCE. (3 Credits). An individualized course of studies under the supervision of members of staff, with the selection of a problem or a case study, research design, review of pertinent literature, discussion and conclusion of results, with oral presentation.
Staff

377-490D,N FOOD AND CONSUMER SCIENCES PROJECT I. (3 Credits). A project involving a review of the literature, experimental work and submission of a report. Assigned to students in their final year.
Professor Idziak and Staff

377-491D,N FOOD AND CONSUMER SCIENCES PROJECT II. (5 Credits). A project involving a review of the literature. experimental work and submission of a report. Assigned to students in their final year.
Professor Idziak and Staff

377-495D,N FOOD AND CONSUMER SCIENCES SEMINAR I. (1 Credit). Oral presentation of a selected topic within the field of Food and Consumer Sciences.
Professor Smyrl

377-496D,N FOOD AND CONSUMER SCIENCES SEMINAR II. (2 Credits). Oral presentations of selected topics within the field of Food and Consumer Sciences.
Professor Smyrl

377-497D,N FOOD AND CONSUMER SCIENCES SEMINAR III. (3 Credits). Oral presentations of selected topics within the field of Food and Consumer Sciences.
Professors Smyrl and Staff

Graduate courses available to undergraduates:
377-602D ADVANCED CHEMISTRY OF FOOD PRODUCTS. (6 Credits).
377-603A TOPICS IN FOOD PROCESSING. (3 Credits).
377-604A SENSORY EVALUATION OF FOOD. (3 Credits).

5.29 HOME ECONOMICS

378-331B FAMILY MANAGEMENT. (3 Credits; 3 lectures; and one 3-hr lab; Prerequisite: 376-214A, 376-217B and 381-330A). The influence of values, goals, resources, needs on family decision making processes. Record keeping and budgeting. Time and motion studies of routine tasks. Practical application of management principles, for low income families, handicapped, etc.
Mrs. Jenneway Eaman

378-332A FAMILY STUDIES—DEVELOPMENT. (3 Credits; 3 lectures and 1 conf. and one 3-hr lab; Prerequisite: 370-230A or 368-301A or permission of instructor). A study of the development of the individual in the family from birth to old age. The recognition and understanding of variations in developmental environment and human potential.

378-333B FAMILY STUDIES—RELATIONSHIPS. (2 Credits; 2 lectures and 1 conf.; Prerequisite: 370-230A or 368-301A). (Offered in alternate years). An understanding of the role of the family in society. The interaction and interrelationships of family members of varying ages. An analysis of various family structures and problems.

5.30 INSTITUTIONAL ADMINISTRATION

380-242A MANAGEMENT THEORIES AND PRACTICES. (3 Credits; 3 lectures). An introduction to contemporary management theories and practices and their effect on the organizational structure and administrative functions of a dietary department.
Professor Raymond

380-343B ACCOUNTING AND COST CONTROL. (3 Credits; 1 lecture). An introduction to the basic principles and concepts of responsibility accounting and cost control, analysis and utilization of financial statements and control system data for decision making.
Professor Raymond

380-345D FOOD SERVICE SYSTEMS MANAGEMENT. (4 Credits; 1 lecture and 1 3-hr. lab.). Application of the theories and principles of management to quantity food production and service. Development of standards and specifications related to purchasing food and food production equipment. Planning food facilities.
Professor Raymond

380-446A PERSONNEL MANAGEMENT. (4 Credits; 3 lectures, 1 conference). The management of people at work. Employee development and the leadership role. The nature of collective bargaining, the role of unions and management.
Professor Raymond

5.31 CONSUMER SERVICES

381-332A CONSUMER IN THE MARKET PLACE. (3 Credits; 3 lectures, 3-hr. conference). A study of the role of the consumer in the economy, factors which influence consumer behaviour, problems faced by the consumer, and legislation and agencies concerned with consumer protection.
Ms. Carter

381-333B PERSONAL AND FAMILY FINANCE. (3 Credits; 3 lectures, 3-hr. conference; prerequisite 381-332A). This course examines the management of family resources. Topics covered include: use of credit, purchasing of durable goods, insurance, taxes, savings, investments, and estate planning.
Ms. Carter

381-401A PROBLEMS IN FAMILY FINANCE. (3 Credits; 3 lectures, 3-hr. conference; prerequisites 381-332A and 381-333B or permission of instructor). A study of the factors that influence family financial problems. Emphasis will be placed on topics such as budgeting and expenditure patterns, mathematics of finance, long range financial planning, and financial counselling.
Ms. Carter

5.32 NUTRITION AND DIETETICS

382-207B INTRODUCTORY NUTRITION. (3 Credits; 3 lectures, 1 conference). A study of the nutrients essential for an adequate diet and ways of meeting these needs. An analysis of some contemporary nutrition problems. This course is suitable for students who wish a course in human nutrition in their program.
Professor Weber

***382-208G PROFESSIONAL PRACTICE (STAGE) IN DIETETICS—LEVEL I.** (4 Credits; six weeks directed experience, during the summer). Two modules, consisting of 3 weeks directed experience each, in the areas of nutrition and food service administration. This clinical experience to be provided in participating health service institutions.
Mrs. Currie

***382-310E PROFESSIONAL PRACTICE (STAGE) IN DIETETICS—LEVEL II.** (6 Credits; two hours per week, second term plus seven weeks following examination period). Two modules consisting of 4 weeks of directed experience, each in the areas of nutrition and food services administration. This clinical experience to be provided in participating health service institutions.
Mrs. Currie

382-337B HUMAN NUTRITION. (3 Credits; 3 lectures, 1 conference; Prerequisite 342-330A). Emphasis on applied quantitative aspects of human nutrition. Nutritive utilization, evaluation and requirements, as related to dietary standards.
Professor Farmer

382-334B DIET THERAPY I. (2 Credits; 1 lecture, 1 conference). Introductory clinical nutrition. Identifying changes in nutrient intake, food and eating patterns necessary for treating disease and its complications.
Ms. Shatenstein

382-401A TOPICS IN HUMAN NUTRITION. (3 Credits; two lectures). (Offered on the Montreal Campus only). This course is offered to students with a High School Teaching Diploma. A study of the nutrients essential for adolescents and ways of meeting these needs. Nutritional implications of fast food service and a study of the dietary factors involved in the prevention of obesity, dental caries and cardiovascular disease.
Professors Farmer and Weber

382-402B TOPICS IN FOOD AND NUTRITION. (3 credits; two lectures; Prerequisite: 382-401A or other introductory course in nutrition). (Offered on the Montreal Campus only). The nutritional implications of food processing, food additives and early feeding practices. World food problems, food and drug regulations, nutrient labelling and the development of nutrition policies and goals.
Professors Farmer and Weber

382-403B COMMUNITY NUTRITION. (3 Credits; 3 hour conference; prerequisite 382-337B). A study of the characteristics and prevention aspects of community health problems. Methods of nutritional assessment, dietary surveys and programme planning will be examined. Opportunity to plan a nutrition programme for a target population will be provided.
Professor Weber

***382-409B PROFESSIONAL PRACTICE (STAGE) IN DIETETICS—LEVEL III.** (7 Credits; ten weeks, second term). Four modules consisting of 4 weeks directed experience in Therapeutic nutrition, 3 weeks experience in Administration in health service institutions; 2 weeks experience in Normal Nutrition, and 1 week experience in Community Nutrition based from the university.
Mrs. Currie

***382-410A PROFESSIONAL PRACTICE (STAGE) IN DIETETICS—LEVEL IV.** (15 Credits; 16 weeks following completionof the academic program). Three modules consisting of 6 weeks directed experience in Therapeutic and Normal Nutrition, 6 weeks experience in Administration, and 4 weeks experience in Community Nutrition, in health service institutions/agencies or the food industry.
Mrs. Currie

382-436A APPLIED HUMAN NUTRITION. (2 Credits; 2 lectures). Computer dietary calculation, interviewing for diet counselling. Preparation of illustrative material for nutrition teaching. Nutrition Canada Survey, natural toxicants, pesticide residues, health foods and food activities will be discussed for nutrition education of the public.
Professor Farmer

382-445A DIET THERAPY II. (3 Credits; 3 lectures, 1 conference). Dietary modification in treatment of pathological conditions including gastrointestinal, liver, renal, circulatory and metabolic diseases.
Mrs. Currie

382-490D DIETETICS PROJECT. (3 Credits). Project involving a review of literature and the application of specific techniques to solving problems of management or clinical dietetics. Submission of a report and oral presentation.
Professor Farmer and Mrs. Currie

*** Successful completion of all components parts of each level of Professional Practice (Stage) in Dietetics is a prerequisite for the next level.**

5.33 COMMUNICATION ARTS

384-422A INSTRUCTIONAL COMMUNICATIONS. (3 Credits; 1 lecture, 1 lab. and 1 conference; Prerequisite: 376-214A). Understanding of the instructional communications principles and methodology and the application to small group instructions and demonstrations. Explorations of the use of audio-visual aids and the mass media in this context. Laboratory work will provide opportunities to apply and evaluate student understanding of the principles.
Mrs. Fleming

5.34 TEXTILES AND CLOTHING

386-220B CONTEMPORARY CLOTHING CONSTRUCTION. (3 Credits; 2 labs.). Principles and techniques of garment construction. The application of these principles in the construction of garments using the commercial pattern and in the making of a sample laboratory manual.
Mrs. Younie

386-232A TEXTILES—NATURAL AND MAN-MADE FIBRES. (3 Credits and 1 lab.). A consumer-oriented study of the history, properties, characteristics and performance limitations of natural and man-made fibres; yarns; fabric constructions; finishing and finishes, mixtures and blends.
Mrs. Jenneway Eaman

386-320A ADVANCED CLOTHING CONSTRUCTION. (3 Credits; 2 lab.; Prerequisite: 386-220B). Principles and techniques of advanced clothing and

their application in the construction of custom tailored or semi-tailored garments while exploring the structural potential of contemporary fabrics.
Mrs. Younie

386-321B APPAREL DESIGN. (3 Credits; 2 labs.). Practical study of garment design by the Flat Pattern method. An introduction of drafting and draping. Experiments in applied design through mediums such as batik, tie-dying and creative stitchery.
Mrs. Jenneway Eaman

386-322B PSYCHOLOGICAL AND SOCIAL BASES OF CLOTHING. (3 Credits; 3 lectures). A study of the function and use of clothing at different stages in the life cycle of the individual. The use of colour and styling as an expression of personality. Historical and contemporary perspectives of dress as a reflection of social rank and life styles.
Mrs. Jenneway Eaman

386-433B TEXTILES CHEMISTRY. (3 Credits; 2 lectures and one lab.). An introduction to the chemistry of cellulose, protein and synthetic fibres; dye stuffs and dyeing; finishing chemicals and their uses.

6 GRADUATE PROGRAMS

Graduate work, under the Faculty of Graduate Studies and Research, McGill University, Montreal, may be undertaken on the Macdonald Campus, in Agricultural Engineering, Agronomy, Animal Science (Animal Breeding, Animal Physiology or Nutrition), Chemistry, Economics, Entomology, Genetics, Horticulture, Microbiology, Parasitology, Plant Pathology, Soil Science and Wildlife Biology.

The advanced courses of study offered lead to the degrees of Master of Science and Doctor of Philosophy.

A number of scholarships and student assistantships are available.

The Faculty of Graduate Studies and Research issues an Announcement giving full information regarding graduate courses, theses, registration, etc., in connection therewith, which will be sent on application to the Dean of the Faculty of Graduate Studies and Research, McGill University, Montreal or to the Registrar, Macdonald Campus of McGill University, Ste. Anne de Bellevue, PQ H9X 1C0. An announcement entitled Postgraduate Fellowships, Bursaries, and Prizes is also available.

7 DIPLOMA IN AGRICULTURE

Director – Professor N.C. Lawson.

The Diploma program, under the sponsorship of the Québec Ministry of Agriculture, is designed to educate and train people to operate and manage commercial farms. Emphasis is being placed on practical training as an integral part of this program. Students spend 24 months in the program. Two academic terms are followed by a summer practical term, then two more academic terms followed by a second summer practical term. Further details, including the syllabus of courses, can be obtained by contactaing the Director of the Program, Dr. N. Lawson, 457-2000, Local 287, or by writing to the Director, Diploma program in Agriculture, P.O. Box 335, Macdonald Campus of McGill University, Ste. Anne de Bellevue, PQ, H9X 1C0. Interested persons should contact the above for an appointment to determine their eligibility for the program.

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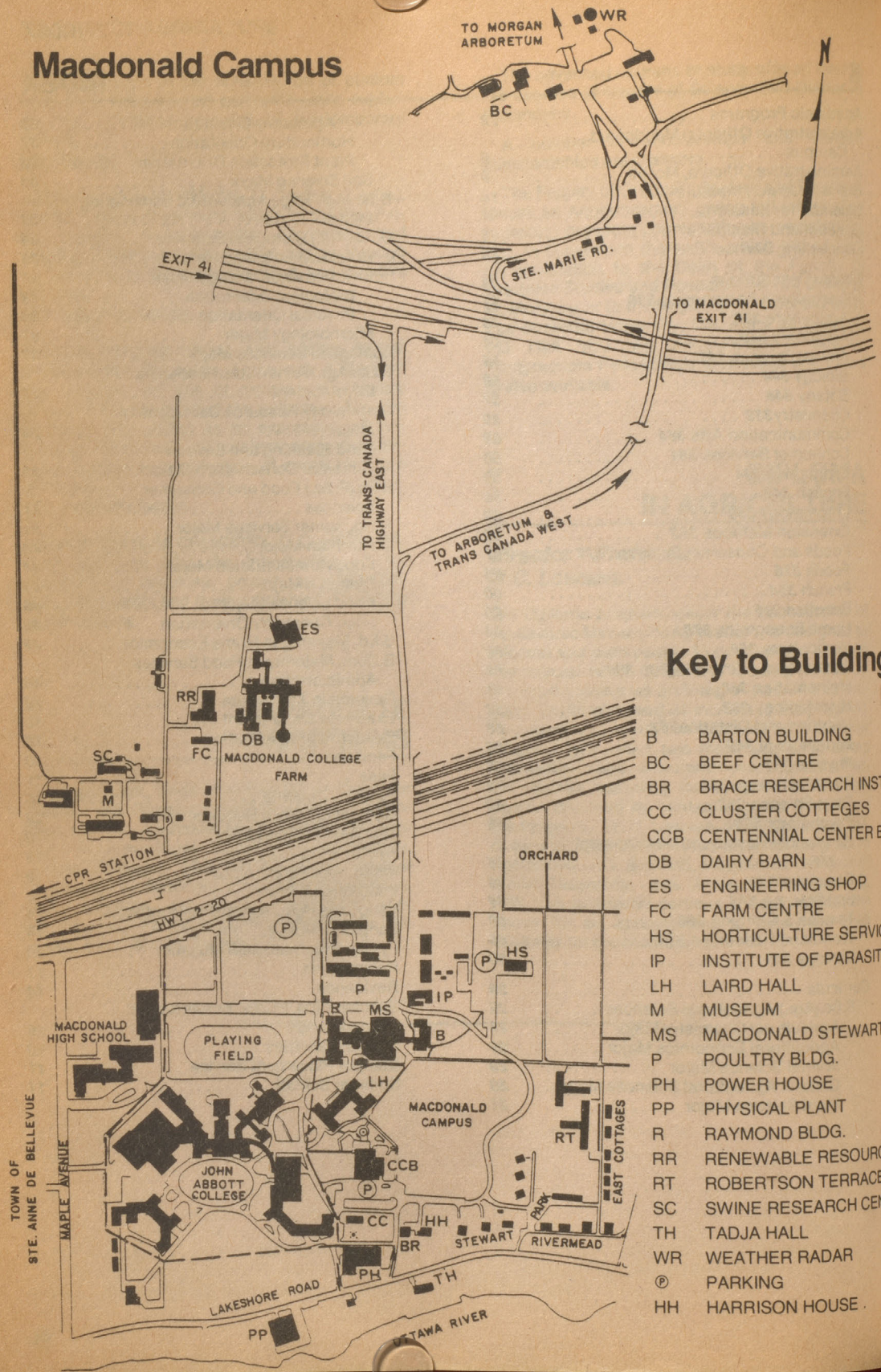
Macdonald Campus



Key to Buildings

B	BARTON BUILDING
BC	BEEF CENTRE
BR	BRACE RESEARCH INSTITU
CC	CLUSTER COTTEGES
CCB	CENTENNIAL CENTER BLDG
DB	DAIRY BARN
ES	ENGINEERING SHOP
FC	FARM CENTRE
HS	HORTICULTURE SERVICES
IP	INSTITUTE OF PARASITOLO
LH	LAIRD HALL
M	MUSEUM
MS	MACDONALD STEWART BLD
P	POULTRY BLDG.
PH	POWER HOUSE
PP	PHYSICAL PLANT
R	RAYMOND BLDG.
RR	RENEWABLE RESOURCES
RT	ROBERTSON TERRACE
SC	SWINE RESEARCH CENTRE
TH	TADJA HALL
WR	WEATHER RADAR
Ⓟ	PARKING
HH	HARRISON HOUSE

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Faculty of Science

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Montreal, PQ, Canada H3A 2T6

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All courses listed in this announcement will be offered in 1982-83 unless a ● appears left of the course number.

The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees, schedules and the revision or cancellation of particular courses.

Legal Deposit I 82

CALENDAR FOR SESSION 1982-83

1982

May 3, Monday	Summer Session lectures begin for courses starting in May.
May 24, Monday	Victoria Day – Administrative Offices closed.
June 1, Tuesday	Summer Session lectures begin for courses starting in June.
June 8, Tuesday and June 9, Wednesday	Convocations
June 24, Thursday	La Fête Nationale du Québec – Administrative Offices closed. (unless changed by legislation)
	N.B. After La fête Nationale du Québec and until Labour Day, most Administrative Offices will be closed each Friday.
June 26, Saturday to August 7, Saturday	French Summer School.
July 1, Thursday	Dominion Day – Administrative Offices closed. (unless changed by legislation)
July 5, Monday	Summer Session lectures begin for courses starting in July.
August 23, Monday to September 1, Wednesday	Supplemental examination period.
August 13, Friday	Deadline for applications for Special and Visiting Students for admission in September.
August 16, Monday to September 3, Friday	Freshman Orientation and preregistration counselling.
September 6, Thursday	Labour Day – Administrative Offices closed.
September 8, Wednesday	Registration – B.A.
September 9, Thursday	Registration – B.A. and B.S.W.
September 10, Friday	Registration – B.Sc.
September 13, Monday	Lectures begin in all years of Arts and Science.
September 16, Thursday	Late registration.
September 27, Monday to October 1, Friday	CHANGE OF COURSE (DROP/ADD) PERIOD.
October 11, Monday	Thanksgiving Day - Lectures cancelled - Administrative Offices closed.
October 25, Monday to October 29, Friday	VERIFICATION PERIOD
November 1, Monday	DEADLINE FOR WITHDRAWING ("W") FROM "A" (FALL TERM) COURSES.
November 10, Tuesday	Fall Convocation.
December 10, Friday	DEADLINE FOR WITHDRAWING ("W") FROM "D" (FULL YEAR) COURSES.
	Last day of lectures in Arts and Science.
December 13, Monday to December 23, Thursday	Class tests in "D" courses and examinations in fall term courses in Arts and Science.
December 15, Wednesday	Deadline for applications for Special and Visiting students for admission in January.
December 25, Saturday	Christmas – Administrative Offices closed. *N.B. Administrative Offices will be closed from Friday, December 24 at 5:00 p.m. until Monday, January 3, 1983 at 9:00 a.m.*

1983

January 1, Saturday	New Year's Day – Administrative Offices closed.
January 4, Tuesday	Orientation for new students registering in January.
January 5, Wednesday	Winter term lectures begin in Arts and in Science.
January 6, Thursday	January Registration (for students entering in January ONLY).
January 17, Monday to January 21, Friday	CHANGE OF COURSE (DROP/ADD) PERIOD FOR "B" (WINTER TERM) COURSES ONLY.
February 4, Friday	Mid-term weekend holiday (Winter Carnival) – Lectures cancelled.
February 14, Monday to February 18, Friday	VERIFICATION PERIOD.
February 21, Monday	DEADLINE FOR WITHDRAWING ("W") FROM "B" (WINTER TERM) COURSES.
February 24, Thursday and February 25, Friday	Study Break – Lectures cancelled.
April 1, Friday to April 4, Monday	Easter — Lectures cancelled – Administrative Offices closed.
April 8, Friday	Last day of lectures in Arts and in Science.
April 14, Tuesday to April 29, Friday	Examinations in Winter term and full year courses in Arts and in Science.
May 2, Monday	Summer Session lectures begin for courses starting in May*.
May 23, Monday	Victoria Day – Administrative Offices closed.
June 1, Wednesday	Summer Session lectures begin for courses starting in June*.
June 8, Wednesday and June 9, Thursday	Convocations
July 4, Monday	Summer Session lectures begin for courses starting in July*.

*tentative dates

1 GENERAL INFORMATION

Faculty of Arts
Faculty of Science

APPLICATIONS AND ADMISSIONS

The Faculty of Arts and the Faculty of Science offer programs leading to the degrees of B.A., B.Sc. and B.S.W.

The academic year at McGill runs from early September until early May, with approximately two weeks vacation at Christmas.

The deadlines for submission of applications are March 1 for admission in September and either September 1 (non-Québec students) or November 1 (Québec students) for admission in January. All applications must be accompanied by a non-refundable fee of $15 in Canadian funds payable by certified cheque or money order to McGill University.

Admission is selective; fulfilment of the minimum requirements does not guarantee acceptance.

Although our Admissions Officers are always pleased to meet prospective students, a personal interview is not required for admission.

Applicants whose native language is not English, and who have not completed a CEGEP program in the Province of Québec, must submit acceptable evidence of facility in English before their application for admission can be considered. Either the Test of English as a Foreign Language (TOEFL) or the University of Michigan English Language test is acceptable.

TOEFL is preferred by the University. The test is administered by the College Entrance Examination Board and is easily available throughout the world. The results reach McGill approximately 8 weeks after the test is taken. It is the student's responsibility to make the necessary arrangements with the examining board to write the test in the country of residence. Full information about the Test and a registration form may be obtained by writing to: Test of English as a Foreign Language, Box 899, Princeton, New Jersey 08540, U.S.A.

Health Requirements for New Students

Along with the letter of acceptance to the University, all students will receive a medical questionnaire complete with a return envelope addressed to the Health Service. Students are requested to complete this questionnaire with the assistance of their physician and to return it in the envelope at the earliest possible date.

General Information for Non-Canadian Students

Non-Canadian and non-permanent resident students **must** first obtain a student visa from a Canadian Embassy or Consulate in their area. While it is not possible to obtain a student visa until both a letter of acceptance from the University and a certificate of acceptance from the Québec government have been issued, students are advised to begin the procedures necessary to secure assurance of admission to Canada and to complete the necessary medical papers for the Canadian Immigration authorities as *soon as possible after submitting an application for admission to the University.* If offered admission, both a copy of the letter of acceptance from the University and the certificate of acceptance from the Québec Government must be submitted to the Immigration Authorities to complete the processing of the Visa application. Student visas can be renewed annually in Canada subsequent to the student's registration.

A pamphlet which describes Canadian immigration regulations in detail and which contains notes and guidance for students from other countries is available from all Canadian Embassies, Consular Offices, and Immigration Offices overseas.

COMPULSORY HEALTH INSURANCE FOR NON-CANADIAN STUDENTS

All non-Canadian students and students who are not permanent residents **must** enrol in the McGill Non-Canadian Student Health and Accident Insurance Plan. In general, the policy provides for payment towards hospital, surgical, diagnostic, and other medical expenses.

Premium assessments are made shortly after registration. All participants in the plan will receive their insurance policy and enrolment card at the time of assessment. Enquiries concerning the insurance plan should be directed to the Health Service or to the Liaison Officer to the Dean of Students.

Professional Studies

Students intending to proceed into Dentistry, Education, Law, Medicine or Religious Studies should consult the Faculties concerned about their prerequisites for admission. Students proceeding into graduate professional studies should note that admission is not automatic and that application forms must be submitted in advance of the prescribed dates. Information regarding admission to the Graduate School of Library Science or the School of Social Work may be obtained from these schools.

ENTRANCE QUALIFICATIONS

Québec Students

Holders of the Diploma of Collegial Studies (Diplôme d'Études Collégiales or D.E.C.) are considered for admission to the first year of an appropriate three year program (90 credits).

Collegial students should refer to the "Structures d'Accueil aux Études Universitaires de Premier Cycle" to ensure that they are registered in an appropriate pre-university program. Students who complete a French Baccalauréat are also considered for admission to the first year of an appropriate three year program.

Entrance to the Faculty of Arts

Although it is preferable to begin a specialization at CEGEP, the Faculty feels that the basic courses in English and Humanities remain the minimum requirements for many programs.

Students planning to enter Psychology should take Biology 301* and 401* or Biology 921*, Mathematics 337* or Mathematics 103* and 307*, and Psychology 102* during their CEGEP years.

Entrance to the Faculty of Science

The Québec Diploma of Collegial Studies (Diplôme d'Études Collégiales or D.E.C.) in Science (or its equivalent) is the normal pattern of preparation for programs in both physical and biological sciences.

Completion of the basic science profile (10.9) including courses Biology 301*, Chemistry 101* and 201*, Mathematics 103* and 203*, Physics 101*, 201*, 301-78* is the minimum requirement for admission to the Faculty. Students intending to follow the programs listed below require either Mathematics 105* (profile 10.10) or Biology 401* and Chemistry 202* (profile 10.11) *in addition to* the basic science profile.

Profile 10.10 – Computer Science, Crystallography, Dynamics of the Oceans and Atmosphere, Earth Physics, Geophysics, Mathematics and Physics, Meteorology, Physics.

Profile 10.11 – Anatomical Sciences, Biochemistry, Biology, Interdepartmental Honours program in Immunology, Microbiology and Immunology, Physiology, Physiology and Physics.

Although the patterns of study described above are strongly recommended, students who have obtained a D.C.S. with other concentrations may be considered for admission.

**CEGEP course numbers – standard throughout the Province of Québec.*

Provinces of Canada Other Than Québec

Entrance to the Faculty of Arts

Ontario Grade 13 students may be admitted directly to a 90-credit program if they have completed five appropriate academic subjects (6 credits are granted for each subject with the exception of mathematics, each course of which receives 3 credits.) English should be included in the student's program; the four elective courses should be appropriate to the program which the student wishes to enter at McGill. Students having only four appropriate subjects will be required to make up an additional six credits at McGill. A maximum of 30 credits can be granted for studies completed in Grade 13.

Students from provinces of Canada other than Québec, Ontario† and Newfoundland who have completed Grade 12 in appropriate academic subjects may be considered for admission to a program requiring the completion of 120 credits (normally four years of study). Students from Newfoundland are required to have completed Grade 11 plus one full year of an appropriate undergraduate program at Memorial University or elsewhere.

Entrance to the Faculty of Science

All programs in the Faculty of Science require that the student complete introductory college level courses in biology (one semester), differential and integral calculus, general chemistry (two semesters), physics (mechanics, electricity and magnetism, waves, optics). Students who have completed these courses with satisfactory performance prior to admission are given credit and/or exemption. Students who are required to complete these basic science courses at McGill must obtain an average grade of C or better in each subject.

Ontario Grade 13 courses in biology and chemistry are accepted for exemption and each is allowed 6 credits. Students who have included calculus and physics in their program are required to complete an additional semester of calculus and physics at McGill unless they pass the Placement Tests which may be written at McGill prior to registration. A maximum of 30 credits can be obtained for appropriate Grade 13 work. Students planning application to the Faculty of Science should follow a pre-science academic program including mathematics. A student who has completed Grade 13 is considered for admission to a university program requiring the completion of the difference between 120 credits and the number of credits which can be granted. For example, a student who has completed biology, chemistry, physics, two (or preferably three) courses in mathematics and one non-science academic course, all at the Grade 13 level, enters a program requiring the completion of 93 credits.

Students from provinces other than Québec, Ontario † and Newfoundland who have completed Grade 12 in appropriate subjects may be considered for admission to a university program requiring the completion of 120 credits (normally four years of study). Students should have completed a course in functions or trigonometry. Courses in chemistry and in physics are recommended. Students from Newfoundland are required to have completed Grade 11 plus one full year of an appropriate undergraduate program at Memorial University or elsewhere. Further information may be obtained by writing to the Admissions Office.

NOTE: Applicants to the Faculty of Science from outside Québec who believe they have taken the equivalent of one or more introductory college level science courses but who do not have acceptable certification of their performance in these courses, should inquire at the Admissions Office as to their eligibility to take Placement Examinations at McGill for credit. These examinations will be held prior to or during the week of registration.

† *Exceptions are sometimes made in the case of Grade 12 students with an average of over 80% in appropriate subjects. Such students may apply to a program requiring the completion of 120 credits.*

Non-Canadian Applicants

General Information

Students from the United States must write College Entrance Examination Board tests including the Scholastic Aptitude Test and three other achievement tests appropriate to the program which they wish to enter at McGill. Applicants to a science program should select a minimum of two tests from biology, chemistry, mathematics and physics.

Students from the Eastern United States may obtain information about the tests by writing to:

The College Entrance Examination Board
Box 592
Princeton, New Jersey 08540

Students from the West should write:

The College Entrance Examination Board
Box 1025
Berkeley, California 94701

Students from Overseas are advised to write CEEB Aptitude and Achievement tests to support their application.

Entrance to the Faculty of Arts

Students from the UNITED KINGDOM and COMMONWEALTH countries may be admitted into a program requiring the completion of 90 credits (three years) if they have completed three Advanced Level papers. An average grade of C or better with not more than one paper having a grade lower than D is required. It is expected that most students will have completed five G.C.E. papers at the Ordinary Level; one Ordinary Level paper must be English language.

Students who have not written Advanced Level examinations but who have very good grades in at least five appropriate Ordinary Level papers, PLUS one full year of formal schooling beyond Ordinary Level in a suitable academic program at a recognized school or college, may be considered for entrance to an undergraduate program requiring the completion of 120 credits (usually four years).

High School graduates from the UNITED STATES may be admitted to an undergraduate program requiring the completion of 120 credits. All applicants should have followed academic programs designed for university entrance. Students who have passed Advanced Placement examinations in appropriate subjects with a grade of "3" or better will be granted some advanced standing.

Entrance to the Faculty of Science

The three-year programs in the Faculty of Science have been designed on the assumption that the student has completed, or will complete at McGill, the equivalent of introductory college-level courses in biology, chemistry, physics and mathematics. These courses are referred to as prerequisite courses. Students who are required to complete these basic science courses at McGill must obtain an average grade of C or better in each subject.

Students who have completed Grade 12 in the UNITED STATES are considered for admission to a program requiring the completion of the difference between 120 credits and the number of prerequisite credits they have earned. An Advanced Placement science course is considered the equivalent of 6 prerequisite credits; a grade of "3" or better is required for Advanced Placement credit to be granted. All applicants should have a strong background in mathematics (including a course in trigonometry or functions). Chemistry and physics are recommended. Biology is also desirable in the case of a student applying to one of the biological science programs.

Students from the UNITED KINGDOM and COMMONWEALTH countries are normally required to have completed examinations in five different G.C.E. subjects including English, chemistry, mathematics, and physics, at least two of which must be at the Advanced Level. An average grade of "C" or better, with no more than one subject having a grade of "D", is also required. Such students are considered for admission to a university program requiring the completion of the difference between 120 credits and the number of prerequisite credits they have earned. Each G.C.E. Advanced Level paper in a

science subject (biology, chemistry, mathematics, physics) with a grade of "D" or better is granted the equivalent of 10 prerequisite credits; a maximum of 30 credits can be granted for Advanced Level results (a maximum of 10 credits is granted for papers in mathematics).

Students who have not written Advanced Level examinations but who have very good grades in at least five appropriate Ordinary Level papers, PLUS one full year of formal schooling beyond Ordinary Level in a suitable academic program at a recognized school or college, may be considered for entrance to an undergraduate program requiring the completion of 120 credits. The five Ordinary Levels should include English, a second language, mathematics, and one of biology, chemistry or physics.

NOTE: Applicants to the Faculty of Science from outside Québec who believe they have taken the equivalent of one or more introductory college-level science courses, but who do not have acceptable certification of their performance in these courses, should inquire at the Admissions Office as to their eligibility to take Placement Examinations at McGill for credit. These examinations will be held prior to or during the week of registration.

Students From Other Countries

Students from other countries are advised to consult the General Announcement or the Admissions Office for specific information of the status of their national education certificates.

TRANSFER STUDENTS FROM OTHER UNIVERSITIES

McGill University accepts applications from students wishing to transfer from other universities. At least sixty credits towards graduation must be earned at McGill for students proceeding to the B.Sc. degree; normally at least 60 McGill credits for a 120 credit program and at least forty-five McGill credits for a 90 credit program are required for the B.A. degree.

Applicants for transfer should have maintained a good average in their university work and have a suitable course background for their intended programs at McGill.

MATURE STUDENT ADMISSION POLICY

Residents of Canada who will be 23 years of age or older by September 1 (for admission to the Fall Session) or January 1 (for admission to the Winter Session) and who lack the academic background normally required for admission may apply for entrance as mature students.

Individuals interested in being considered for entrance under this policy should contact the Admissions Office for further information.

HOLDER OF A BACHELOR'S DEGREE

Students wishing to obtain a B.A. degree who already have a Bachelor's degree will, if admitted, be required to complete a minimum of 60 credits for the second degree. For students wishing a B.Sc. degree, the minimum is 60 credits plus completion of any basic science courses (Biology, Chemistry, Mathematics, Physics) not previously taken.

SPECIAL AND VISITING STUDENTS

A student seeking admission as a Special or Visiting student in either Faculty should refer to the appropriate section of "Faculty Regulations" in this Announcement.

READMISSION

A student wishing to return to either Faculty after an absence of a portion of an academic year or more must follow the procedures outlined in the section on Readmission in the "Faculty Regulations" part of this Announcement.

INTER-FACULTY TRANSFER

In certain cases students will be permitted to transfer from another Faculty to Arts or to Science. Information and inter-faculty transfer forms are available at the Student Affairs Office.

FINANCIAL INFORMATION

The University reserves the right to make changes without notice in the published scale of fees.

Fees are not refundable, except under special conditions. See "Regulations Concerning Withdrawal" below.

Enquiries regarding fees should be made at the Registrar's Office, F. Cyril James Administration Building.

FEES

Tuition fees of $19 per credit or $145 per credit for foreign students† are charged. For example, a student who is taking a normal full academic load of 30 credits would pay $570 ($4350 for foreign students). Annual tuition fees vary according to the number of credits taken and are assessed each term.

Student Services and Students' Societies fees for all students taking 24 or more credits are $95 and $43*.

*B.S.W. students pay $44 for Students' Societies.

Part-Time, Special and Visiting Students

All Part-Time, Special and Visiting Students are assessed as noted above. In addition, the following fees are assessed *per term:*

	Student Services	*Student Societies*
9 or more credits	$47.50	$16.00
6.5 to 8.5 credits*	$25.25	$ 7.95
3.5 to 6 credits*	$15.75	$ 7.95
3 credits or less*	$ 9.50	$ 7.95

**Excludes the use of athletics facilities. An extra payment of $21.25 per term may be made if use of these facilities is desired. This can be arranged at the Department of Athletics Office or the Dean of Students Office.*

†Exemption from Foreign Student Fees may be claimed by students in certain categories. A list of these categories and required application forms are available at registration.

Special Fees

Application for Admission	$15.00
Late Registration	50.00
Late Payment fee (after specified date):	
1st 30 days	10.00
After 30 days	25.00
Graduation (including academic dress for those *in presentia)*	20.00
Duplicate Student Identity Card	5.00
Duplicate diploma	20.00
Certified transcript of student's record:	
First copy with each order	2.25
Additional copies made at the same time, each	.75
Re-reading examination paper	25.00
Supplementals, each paper	10.00
Late change of course (drop/add)	5.00
Residence fees (see General Announcement)	

REGULATIONS FOR PAYMENT OF FEES

New Students

Students entering the University for the first time are required to pay their fees for the term in which they are registered either by mail or in person at the Accounting Office within 10 days of registration. For students registering in September the Winter term fees are due before January 15th.

Returning Students

Returning students from the previous year must pay their tuition fees for the Fall term, plus half their annual Students' Societies and Student Services fees by mail or in person to the Accounting Office before August 23rd, otherwise they will not be permitted to register. Instructions for paying fees in advance will be mailed to all returning students, either with their Sessional Reports of Standing or a short time later. Students who have been notified by the University of the award of a scholarship, bursary or student loan, and who require this award for payment of the Fall term fees, must obtain permission to delay payment of fees from the Student Aid Office.

The Winter term fees are due by January 15th. A late payment fee as stated above is charged for payment after this date.

Late Registration

Students registering late **must** pay their fees at the time of registration.

As soon as possible after the prescribed dates for the payment of tuition fees the Chief Accountant will send to the Registrar's Office a list of the registered students who have not paid these fees. Transcripts of records, diplomas and permission to register will be withheld by the Registrar until such time as tuition fees as well as outstanding residence fees, library fines or other charges are paid.

REGULATIONS CONCERNING WITHDRAWAL

Students who wish to withdraw from the University or from certain courses must secure the permission of the Associate Dean. The Student Affairs Office will supply the necessary form which must be completed and submitted for approval. As the Student ID card is the property of the University, students withdrawing from all their courses must attach their Student Identity Card to the withdrawal form. *A student considering withdrawal is strongly advised to consult the Associate Dean before making a final decision.*

Tuition fees for the term in which the student withdraws are refundable as shown below and apply to *individual course* withdrawal as well as to *complete* withdrawal from the University. The effective date for refunds will be the date on which the official withdrawal form was completed. Dates of notification of the course instructors or of discontinuance of class attendance will not suffice. *If students wish to discuss the refund policy applicable to a special case, they must consult the Registrar's Office.*

Student Services and Students' Societies fees are not refundable after September 30 for the Fall term and after January 31 for the Winter term.

Fall Term	Refunds
Up to and including September 30	100% **(Less minimum charge of $50 in the case of complete withdrawal)**
Up to and including October 15	50%
After October 15	No refund

Winter Term	
Up to and including January 31	100% **(Less minimum charge of $50 in the case of complete withdrawal)**
Up to and including February 15	50%
After February 15	No refund

SCHOLARSHIPS AND FINANCIAL AID

Entrance scholarships include the $5000 Greville Smith Scholarships, and the J.W. McConnell Scholarships in Science and Engineering, the James McGill Scholarships, the R.E. Powell Scholarships, the James Fraser Jewell Scholarships and the Morris Wilson Memorial Scholarships, all valued at $2500 each. Applications must be submitted by March 1. Further information regarding entrance scholarships and awards may be obtained at the time of application for admission.

Full time, in course students in the Faculties of Arts and of Science need not make application for scholarships, except in the case of the Moyse Travelling Scholarships.

To be eligible for an award, students must have completed at least 27 credits, in the regular session of the academic year preceding the award.

In order to hold an undergraduate scholarship, the successful candidate must proceed regularly as a full time student in a degree program in the University and fulfill any further conditions prescribed for the scholarship.

Full-time students will be known as "Faculty Scholars" when their academic performances are outstanding. The designation, while carrying no monetary reward, is an official University recognition of the students' achievements and will be noted on the students' transcripts.

Full information concerning scholarships and financial aid is available in the *Undergraduate Scholarships and Awards Announcement* which may be obtained from the Registrar's Office.

STUDENT SERVICES AND RESIDENTIAL FACILITIES

A variety of student services and residence accommodation, co-educational and for women only, are available. For details see the *General Announcement* available from the Registrar's office.

REGISTRATION

GENERAL INFORMATION

Registration normally takes place early in September for students entering in September and in January for students entering in January; lectures begin shortly thereafter. Complete information for newly accepted candidates is sent with the letter of admission, and is specified on the Report of Standing for returning students eligible to re-register.

Incoming students in programs requiring 96 or fewer credits who have made their choice as to their area of study may proceed directly to the appropriate Academic Adviser for completion of a Study Plan Form before registration (see page 15 Faculty Regulations.) Students who have not decided on their area of study or who are seeking additional advice should first consult an adviser in the Student Affairs Office, Dawson Hall, for guidance. Students admitted to a program requiring the completion of 97-120 credits will, in most cases, be assigned to an adviser in the Student Affairs Office for completion of a Study Plan Form before registration.

Students must come to the specified place for registration at the appropriate date and time, and must bring with them the following:

Returning Students:
- Report of Standing (if the student is returning in satisfactory or probationary standing) or letter of readmission;
- student I.D. card;
- approved study plan form.
- If applicable, a permission to register form and/or deferred or supplemental results;

New Students:
- letter of admission;
- approved study plan form.

TIMETABLE

An official lecture timetable is available in August. A preliminary version of the timetable (omitting lecture locations) will be posted in various locations on campus in April. Copies will be available for consultation in Advisers' offices, Departmental offices and the Student Affairs Office.

It is the responsibility of all students to make sure at the time of registration that there is no

conflict in the timetable of courses which they propose to follow and to obtain sectioning cards for all courses listed in the timetable as requiring them.

LATE REGISTRATION

There will be late registration for those unable to register at the stipulated times in September or January (see Calendar for Session for September late registration date; all other late registrants must present themselves at the Registrar's Office). There will be a late registration fee of $50.

COURSE NUMBERING SYSTEM

Courses are given a 7 place designation. The first three digits specify the department by a numerical code (see table below), the next three digits form the course number proper, and the final letter indicates the term or terms during which the course is offered; most courses follow this pattern:

A – Fall term
B – Winter term
D – Full session
E – WInter term and Summer session
G – Summer session and Fall term
N – Winter term and Fall term
J – Winter term, Summer session and Fall term
C – Summer session courses starting in May
L – Summer session courses starting in June
T – Summer session courses starting in July

To illustrate: 189-223A designates Mathematics (189) course 223 given in the Fall term; 180-222A, B denotes Chemistry (180) course 222 given in either the Fall or Winter terms; 204-201D designates Psychology (204) course 201 given over the full session; 183-499G denotes Geography (183) course 499, a field course which begins in the Summer session and ends in the Fall term; 186-231E denotes Geological Sciences (186) course 231, a field course which begins in the Winter term and ends in the Summer session.

DEPARTMENTAL CODES

101 – History
102 – Comparative Literature (Graduate program only).
104 – Linguistics
107 – Philosophy
109 – Communications (Graduate program only).
110 – English
111 – African Studies
114 – Classics
117 – East Asian Languages and Literature
123 – Art History
125 – French Language and Literature
127,128 – English and French Language Centre
129 – German
132 – Italian
135 – Jewish Studies Program
138 – Latin American Studies
141 – Russian and Slavic Studies
144 – Hispanic Studies (Spanish)
151 – Anthropology
154 – Economics
157 – Centre d'Études Canadiennes-Françaises
160 – Political Science
166 – Sociology
177 – Biology
180 – Chemistry
183 – Geography
186 – Geological Sciences
189 – Mathematics
195 – Meteorology
197 – Northern Studies and Research
198 – Physics
204 – Psychology
210,211,213,214,215,243 – Music
260 – Religious Studies
271-280 – Management
308 – Computer Science
391 – Parasitology (Macdonald Campus)
395 – Institute of Oceanography
396 – French Summer School
397 – Islamic Studies
399 – Biomedical Engineering
407 – Social Work
413 – Education
490 – Law
504 – Anatomy
507 – Biochemistry
516 – Experimental Medicine
528 – Microbiology and Immunology
546 – Pathology
549 – Pharmacology
552 – Physiology

FACULTY REGULATIONS

It is the responsibility of each student in the Faculties of Arts or of Science to be aware of the Faculty Regulations as stated in this Announcement.

GENERAL INFORMATION

Arts

The Faculty of Arts offers Major and Honours programs' in a wide range of fields as well as a series of interdisciplinary majors. In cooperation with the Faculty of Science, some B.A. Faculty programs are also offered.

In a Major program, 54 credits must normally be approved as part of that program. Students

may select their remaining courses from the offerings of the Faculties of Arts and of Science.

Honours programs demand a high degree of specialization, and require the student to satisfy specific departmental Honours requirements while maintaining a good academic standing. Joint Honours programs are available in many related disciplines. Consult departmental listings.

Science

There are three types of program: Faculty programs, Major programs and Honours programs.

A Faculty program is an approved coherent selection of courses giving the student a useful concentration in a recognized area. Three-fifths of the student's course load in a Faculty program is specified, the remaining courses being freely elected from those offered in the Faculties of Science and of Arts. A student in a Faculty program may thus choose a pattern of study which can range from one yielding a broad education to one specializing in particular interests.

Major programs are more specialized than Faculty programs, and are usually centred on a specific discipline or department. Between three-fifths and four-fifths of the course load is specified in the program and the student is free to elect the remaining courses from the offerings of the Faculties of Science and of Arts.

Honours programs require the student to maintain academic performance at a high standard in addition to involving a very high degree of specialization. They are designed for those students wishing an intensive preparation for graduate studies.

Multiple Programs

In addition to an Honours or Major program, students in the Faculty of Arts or of Science may pursue a second program with the approval of the Associate Dean. Students who wish to do this should consult the department concerned for advice each year. Departments must certify the completion of the second program at graduation. In some circumstances, the same course may be counted toward the completion of two programs. See the Student Affairs Office in Dawson Hall for details. (NOTE: This arrangement is distinct from "joint honours" or the few double major programs currently authorized.)

GRADUATION

The student must complete Faculty and program requirements in order to graduate. It is the responsibility of the student to ensure that all Faculty requirements are met before graduation. All students should check with their Adviser early in the graduating year if they have any questions about whether they will meet all program requirements by graduation time.

It is essential that students indicate the expected date of graduation on the registration card in the final year and verify this date on the course cards and verification forms. The Student Affairs Office should be notified immediately when a final year student changes the expected date of graduation.

Faculty Requirements

Each student's minimum credit requirement for the degree is determined at the time of acceptance and is as specified in the letter of admission. In addition to completing the minimum credit requirement, each candidate for a degree must have achieved a minimum CGPA of 2.0. The minimum residency requirement for a B.A. degree is 45 or 60 credits, depending on the program to which the student has been admitted, and for a B.Sc. degree is 60 credits.

Note: In the case of certain students in the Faculty of Science, specified basic science requirements (biology, chemistry, mathematics, physics) must be completed with a grade of C or better.

Departments may recommend to Faculty that a student be awarded Honours or First Class Honours under the following conditions: that the student complete all requirements imposed by the department, and that the CGPA at graduation be 2.8 to 3.49 for Honours and 3.5 or better for First Class Honours. Some Honours programs have additional requirements which must be met before a student is recommended for Honours or First Class Honours (see the departmental entries).

Students in Major or Faculty programs whose academic performance is appropriate may be awarded their degrees with "Distinction" or "Great Distinction" if they have completed a minimum of 60 McGill credits. General guidelines for these awards are: Dinstinction - CGPA at graduation 3.30 to 3.49; Great Distinction - CGPA at graduation 3.50 or greater. In the case of students who entered the Faculty as transfer students (either from another Faculty or from another university), in addition to the general CGPA guidelines, consideration is given to the quality of their work prior to admission to the Faculty in assessing the award to be made.

Program Requirements

To fulfill the requirements of a Faculty, Major or Honours program students must pass all required courses in their program with a grade of C or better.

Students who fail to obtain a satisfactory grade in a course required in their program must either pass the supplemental examination in the course (if available) or do additional work for a

supplemental grade or repeat the course. If the course is taken as an option in the program, the student may choose to replace it with another option.

The mark achieved in a repeated course will count into the GPA and the CGPA, together with the original mark. The mark achieved in a supplemental will count into the CGPA. However, if the student achieved a "D" in the original course, and thus already received credit for the course, additional credit for passing the course again will not be granted.

Students may choose to substitute another course for one in which they have received a grade of "F", "J" or "D" under the following guidelines: In the case of a required course in a program, specifically designated by course number, substitution will be allowed only in special cases, and students should consult their Adviser. An optional course within a program may be replaced only by another option. (If a student chooses to substitute another option for a course in which a grade of D was received, credit for the first course will still be given but as an elective.)

COURSE RESTRICTIONS

Students in the Faculties of Arts and of Science are permitted to take for credit any courses described in this Announcement unless otherwise indicated and subject to the general rule that no course so taken may duplicate substantially any other course for which the student receives credit. Prerequisites and other kinds of restricting information are stated in each course description and/or in the general department entry.

Registration for 500-level courses is restricted to final-year undergraduates and graduate students, and requires the written permission of the instructor.

Other restrictions include courses that require the permission of the instructor because of space limitations or because the course is normally open only to students in a particular program or to Honours students.

Students should consult this calendar and/or the timetable to determine if permission of the instructor, the department, or the faculty is required for any course they wish to take, or if sectioning slips must be obtained.

No credit at McGill will be given to a student repeating the material contained in a course already passed at CEGEP or another university.

Students in the Faculty of Arts may take for elective credit any course described (except where otherwise indicated) in the Announcement of the Faculties of Arts and of Science subject to course restrictions above. In certain cases, a student is permitted to choose an elective course from another Faculty, e.g. Education, Management, etc. (maximum 6 credits per year, 18 credits per degree). Approval of the Academic Adviser and, in some cases, the Associate Dean is necessary. Faculty of Music courses listed in this Announcement, and other courses from faculties other than Arts or Science, which are specifically required in Arts programs, shall be treated as courses taught within the Faculty, for students in those programs. In no case may a student in the Faculty of Arts take more than 27 credits outside the Faculties of Arts and of Science, unless a greater number are specifically required as part of a program.

Students in the Faculty of Science may take for elective credit any course described (except where otherwise indicated) in the Announcement of the Faculties of Arts and of Science subject to course restrictions above. In addition, 6 credits of elective courses from Faculties other than Science and Arts which are not described in this Announcement may be chosen in any one period from September through August, to a maximum of 18 credits in the student's degree program. Students must have the necessary prerequisites and permission of the instructor. It is the students' responsibility, in cases of potential overlap of material between a course for which they have already received credit and a course they propose to take, to determine from the Office of the Associate Dean whether or not additional credit can be obtained for the proposed course.

Students wishing to take courses at the Centre for Continuing Education for credit towards their degree program must consult the Student Affairs Office.

GRADING AND CREDIT SYSTEM

All courses carry a credit rating indicated beside the course title in the Announcement listing.

Courses are graded either by letter grades or in percentages, but the official grade in each course is the letter grade. All reports of standing,verification forms, transcripts and other documents will show both letter grades and reported percentages. Grades A through C are termed satisfactory passes, D a conditional pass and F a failure. Certain courses have been approved for Pass/Fail (P/F) grading.

Although the grade of D is a passing grade, a grade of C or higher (Satisfactory Pass) must be achieved in all courses specified as required courses for an Honours, Major or Faculty program. Moreover students may not register for a course for which they have not passed all the prerequisite courses with a grade of C or better, except by permission of the instructor concerned.

The letter grades and their numerical equivalents are shown in the following table:

Letter Grades	Grade Points	Percentages
A	4.0	85-100
A–	3.7	80-84
B+	3.3	75-79
B	3.0	70-74
B–	2.7	65-69
C+	2.3	60-64
C	2.0	55-59
D	1.0	50-54
F(Fail)	0	0.49

The earned grade point for each course is calculated by multiplying the credit weight of the course by the numerical equivalent of the letter grade earned. Standing will be determined on the basis of a grade point average (GPA) computed by dividing the sum of the grade points accumulated during the year by the total course credits attempted.

The cumulative grade point average (CGPA) will be the grade point average calculated using the student's entire record at McGill in the same degree program; if the program is changed, the CGPA starts again. Grades of D or F continue to be used in the calculation of the CGPA even after the course is repeated or a supplemental examination is taken.

In classes of 25 or more students, the GPA of the class, as of the submission of grades, will be printed on the student's transcript as a letter grade, beside the grade gained by the individual student. Students with incomplete grades will not be included in the class average unless their grades are completed within four months when a revised class average will be calculated.

By the course change (drop/add) period in each term, the instructor of each course starting in that term will inform students: whether there will be a final examination in the course, and if so, whether it will be compulsory or optional; how term work affects the final mark in the course, and how term work will be distributed through the year; whether letter grades or percentages will be given in the course; whether there will be a supplemental examination in the course, and if so, whether term work will be included in the supplemental grade (courses normally have supplemental examinations, and courses with formal final examinations *must* have supplementals); whether students with marks of D, F or J will have the option of submitting additional work, and if so, how the supplemental mark will be calculated.

Transfer Credits

In certain cases, credit may be granted for courses passed with a grade of C or better at other universities. Approval by the Associate Dean is necessary and must be obtained prior to taking the course. It is the student's responsibility to ensure that transcripts from the other university are sent to the Associate Dean of the appropriate faculty.

There is an agreement among the universities in the Province of Québec whereby a student, under special circumstances, may take some of his course load in any academic year with Faculty permission at another university in the Province of Québec and have these courses recognized by McGill. Further information may be obtained from the office of the Associate Dean.

NOTE: Grades for transfer courses are not entered on the student's McGill transcript and are not included in the calculation of the GPA or CGPA.

ACADEMIC STANDING

Satisfactory Standing

Students enter the University in satisfactory standing and remain in this standing unless their GPA for any year drops below 2.0

Probationary Standing

A student whose GPA drops to between 1.5 and 1.99 (1.2 and 1.99 in the first year if the student enters U1) is placed in probationary standing and is permitted to take a maximum of 12 credits per term.

A student in probationary standing may return to satisfactory standing at the end of the next academic year by obtaining a GPA of 2.5 or CGPA of 2.0. Failure to achieve these levels of performance will cause the student to be placed in unsatisfactory standing.

Unsatisfactory Standing

A GPA of less than 1.5 (1.2 in the first year if the student enters U1) places a student in unsatisfactory standing.

A student in unsatisfactory standing may not re-register in the Faculty without special permission, but may be readmitted after appealing to the Committee on Student Standing and is considered to be in probationary standing for the next academic session. A student in unsatisfactory standing for the second time must withdraw permanently.

Honours

To be registered in an Honours program after first year, a student must have attained a GPA and CGPA of at least 2.8 in the previous year, unless the student has special permission from the Department and the Associate Dean. Departments may impose additional Honours requirements. These, where applicable, will be found with the departmental Honours program descriptions.

STUDENT CATEGORIES AND COURSE LOADS

Degree Candidates

The normal course load per term is 15 credits. Students in satisfactory standing may take up to 17 credits per term. A load of up to 19 credits per term is permitted students whose GPA is above 3.0.

Students in probationary standing take a maximum of 12 credits per term.

Students who wish to carry fewer than 12 credits per term are considered to be part-time and must consult the Student Affairs Office.

Special Students

A special student takes regular credit courses, but is not working towards a degree. Special student status normally requires a student to hold an undergraduate degree and to have an approved plan of study.

In the Faculty of Arts, any person who is otherwise admissible to the Faculty may also apply. If accepted, permission is given to register for up to 12 credits per year or 6 credits per term.

Applications are available from the Student Affairs Office, Dawson Hall. Deadline for submission of application and supporting documents is August 15 for admission in September and December 15 for admission in January.

Visiting Students

Visiting students are those who take courses at McGill for credit towards their program at another university. Applications must be made at the Student Affairs Office before August 15 for admission in September and before December 15 for admission in January. Visiting student status may be granted for a maximum of one year.

STUDENT RECORDS

Personal Information

It is important that all students keep their official records up to date.

Any change or correction in name, home address and telephone number, Montreal address and telephone number should be reported to the Student Affairs Office as soon as possible.

Verification of Program

Students are responsible for their registration in the proper courses and programs and should pick up their verification forms at the Student Affairs Office, Dawson Hall during the verification periods in October and February. It is the student's responsibility to check the verification form for errors and return it, signed, to the Student Affairs Office.

Students who expect to graduate in January or June of the current academic year or November of the following academic year should check that the expected date of graduation on the form is correct; if it is incorrect, the student may be overlooked for graduation.

Reports of Standing

Reports of standing, showing the student's record for the fall and winter terms, are issued in June and mailed to the student's home address.

Access to Records

Reports of standing and all other correspondence are sent directly to the students who retain full control as to who has access to their records. No progress report or any other information is sent to parents and/or sponsor unless specifically requested by the student. Transcripts of record, if required, must be requested by the student from the Registrar's Office and are released only with the permission of the student. Students may not receive official transcripts which must go directly to the university or employer concerned. One free copy of the transcript with each new order of transcripts is sent to the student (stamped "For Student Use"). The University will only issue complete transcripts recording all work attempted and results obtained in any and all programs, and partial transcripts will in no circumstances be issued.

TRANSCRIPT OF ACADEMIC RECORD

Certified transcript(s) of a student's academic record may be obtained by applying to the Registrar's Office, F. Cyril James Building. Transcripts are not available from the Student Affairs Office. Students may, however, photocopy their verification forms before returning them during a verification period (see above), for use as an unofficial academic record.

All courses taken at McGill and all results (both letter grades and reported percentages) obtained appear on the transcript.

The following is an explanation of the symbols used:

A,A– B+,B,B– C+,C	}	satisfactory pass
D	–	conditional pass
F	–	failure
P	–	pass
K	–	incomplete; deadline extended for submission of work in a course (maximum four months).
KF	–	failed to meet the extended deadline for submission of work

in a course; counts as a failure in the GPA and CGPA.

KK – not required to complete course.

K* – further extension granted.

J – absent; the student is registered for a course but does not write the examination or do other required work. The J will be calculated as a failure in the GPA and CGPA.

W – withdrew; a course dropped, with permission, after the change of course period. Does not enter into the GPA calculation.

WF – withdrew failing; a course dropped, with special permission, after Faculty deadline for Withdrawal from Course, the student's performance in the course at that stage being on the level of an F. Does not enter into GPA calculation.

L – deferred examination.

L* – permitted to defer examination for more than the normal period.

WL – Faculty permission to withdraw from a deferred examination.

Q – course continued in next term.

&& – grade not yet available (no averages calculated).

– – – no grade-student withdrew from the University.

NOTE: Although students register in only one program, some students may also complete the requirements for a second program. Recognition of this situation on the final transcript of such a student is possible in the form of a notation that the student has also completed the second program. Students wishing to arrange for this recognition on their transcript should consult the Student Affairs Office before registering for the final year.

ADVISERS

It is essential that each student consult with an adviser in the Student Affairs Office and/or in a Department and complete a study plan form before registration, as explained below:

General Counselling

General program and course information is available at the Student Affairs Office. Students who are undecided as to their program or who may wish to change programs may consult a counsellor in the Student Affairs Office or may seek further information from a department in their general area of interest. They will subsequently be referred to an Academic Adviser (see below) for approval of their program and completion of a study plan form before registration.

Academic Advisers

Each program has appointed Academic Advisers who will meet with students and approve their programs by signing the study plan form in Honours, Major and Faculty programs. (See the departmental listings for their names and/or locations).

When meeting with an Academic Adviser, every student should bring:

- Report of Standing (if the student is returning in satisfactory or probationary standing);
- if applicable, a permission to register form and/or deferred or supplemental results;
- letter of admission or re-admission.

All students should consult this Announcement and the lecture timetable before this meeting and should bring these documents with them.

New Students

Students admitted to a program requiring 96 or fewer credits must consult an Academic Adviser and must present their transcripts and letters of admission to facilitate program planning.

Students admitted to a program requiring 97-120 credits will normally be registered in a Freshman Program until they complete their first year and must consult an adviser in the Student Affairs Office (telephone 392-5084) to obtain advice and complete a study plan form before registration.

SPECIAL TERMS APPLIED TO COURSES

Required Course: A course which, if satisfactorily passed, will be counted as completing part of the credit total constituting the student's program. Required courses include obligatory and optional courses.

Obligatory course: A course, specifically listed by number, that forms part of an Honours, Major or Faculty program.

Optional course: A course or sequence of courses that may be selected as part of an Honours, Major or Faculty program.

Elective course: A course selected to fulfill part of the credit requirements for the degree but which is not counted as part of the Honours, Major or Faculty program in which a student is registered (See Course Restrictions).

Prerequisite: Course A is prerequisite to course B if a satisfactory pass in course A is required for admission to course B.

Corequisite: Course A is corequisite to course B if course A must be taken concurrently with (or may have been taken prior to) course B.

Linked Courses: Two one-term courses where no credit will be given for either course unless both are taken.

CHANGE OF COURSE (DROP/ADD)

Students who wish to change a course (add a course and/or drop a course) for which they are registered must obtain change of course (drop/add) cards from the Student Affairs Office within the change of course (drop/add) period (see dates below). Such changes must not introduce conflicts in the timetable nor destroy the required sequence of courses.

Changes must be approved by the Adviser if the course is a required course, if the student wishes to add a course which does not appear in this Calendar, or if the course changes increase the student's credit total for either term by more than 4 credits.

Changes must be approved by the course instructor when they involve courses having restricted enrolment, or when the course is at the 500 level or above.

Change of Course (Drop/Add) Period*

A courses (fall term) – Monday, September 27, 1982 to Friday, October 1, 1982.
D courses (full year) – Monday, September 27, 1982 to Friday, October 1, 1982.
B courses (winter term) – Monday, January 17, 1983 to Friday, January 21, 1983.

**Students who wish to change a course (drop/add) after the change of course period may apply to the Student Affairs Office until October 8, 1982 for "A" and "D" courses, and January 28, 1983 for "B" courses and must pay a late fee of $5 for each change. After these dates no change of course (drop/add) will be allowed.*

Change of Section

Many courses with large enrolments are given in several sections at different times. For any change of section within the same course, the Department concerned should be consulted.

WITHDRAWAL FROM COURSE

Students who wish to withdraw from the University, or from course(s), must secure the permission of the Associate Dean. Students who wish to withdraw from required courses must also secure permission from their Adviser. The Student Affairs Office will supply the necessary form which must be completed and approved before withdrawal is considered to have taken place.

Withdrawal from a course after the change of course (drop/add) period will be allowed up to the following dates:
A courses (fall term) – Monday, November 1, 1982.
D courses (full year) – Friday, December 10, 1982.
B courses (winter term) – Monday, February 21, 1983.

The transcript will show the course with the symbol of W, but the course will not be counted in the GPA.

After the deadline listed above, the Associate Dean may, under exceptional circumstances, grant permission for a student to withdraw from a course. (Permission will not be granted merely because a student is doing unsatisfactory work). W or WF as appropriate will appear on the transcript, but will not be calculated in the GPA.

LANGUAGE POLICY

The language of instruction at McGill is English. Students may if they wish write term papers and answers to examinations in French (except in the case of certain language and literature courses), but competence in English is essential to success at the University. It is recommended that students who lack fluency in English take a course in English as a second language at McGill's Summer Session or elsewhere before embarking on a university program of studies.

There are no language requirements in either faculty. English-speaking Québec students are encouraged to develop proficiency in French.

Language Policy For Professions

Québec law now requires that candidates seeking admission to provincially-recognized professional corporations (see the *General Announcement)* must possess a working knowledge of the French language, i.e. be able to communicate verbally and in writing in that language.

To demonstrate this capability, candidates will normally be required to pass an examination set by the Office de la langue française, unless they can show that three years of instruction in a French post-primary school have been completed. The professional corporation will require this proof of attendance or of successful completion of the Office examination.

EXAMINATIONS

Students will be informed, by the end of the change of course period, of the evaluation method to be used in each course.

Students will not be permitted to write an examination in any course unless they have fulfilled the requirements of the course to the satisfaction of the instructor and the Associate Dean. Once students have presented themselves for an examination or test, they must submit all written-work to the invigilator before leaving.

Students are reminded that cheating in any examination is considered a serious offence which could lead to expulsion from the University.

Class Tests

Members of the teaching staff may from time to time give interim class tests if they think them necessary.

Final Examinations

Formal final examinations are held during an examination period following the term in which the course is given. In some courses there is no final examination; standing in these courses is determined on the basis of term work and class tests.

Instructors are not permitted to grant any special treatment regarding examinations to any student. If a student believes there is some circumstance which might be legitimately taken into account in evaluating his or her performance, he or she should apply to the Associate Dean.

Students who are not present for an examination must clarify their status in the course at the Student Affairs Office and may be allowed to write a supplemental examination. If the absence is for an accepted reason such as illness, family affliction, etc., permission may be granted to write a deferred examination. If deferred status is not granted, the student will receive a grade of "J" in the course which will count as a failure in the GPA and CGPA, but may be allowed to write a supplemental examination.

It is the responsibility of the student to confirm the date, time and place of the examination by checking examination schedules posted on notice boards on campus. No student will be allowed to enter an examination after the first half hour.

NOTE: Students enrolled in courses in Faculties other than Arts or Science must confirm examination dates with those Faculties.

Supplemental Assessments

1. Supplemental Examinations

Only one supplemental examination is allowed in a course. There is a supplemental examination period during the month of August. Students may receive permission to write supplemental examinations (for courses that have formal examinations) in courses in which they obtained a D, F or J and must avail themselves of this privilege at the time of the next supplemental examination period. The supplemental result will not erase the D or F originally obtained which is used in calculating the GPA. Both the original mark and the supplemental result will be calculated in the CGPA (i.e. the taking of a supplemental examination has the same effect on a student's CGPA as does repeating the course).

Written application to write a supplemental examination must be received at the Student Affairs Office before the first Friday in July. Special permission is required if a student wishes to write supplementals or additional work totaling more than 7 credits. A non-refundable fee of $10.00 for each supplemental paper is payable at the time of application. Consult advisers at the Student Affairs office for further information.

It may be possible for a student to arrange to write a supplemental examination at certain specified locations other than McGill University; students should apply at the Student Affairs Office. There is an additional fee.

In certain cases, students may be permitted to write one supplemental examination during the April-May examination period in a first term course in which they obtained a D, J or F, if the course is also given in the second term. No attempt is made to avoid conflict between this supplemental and the student's required final examinations, and in the case of such a timetable conflict the student will be required to write the final examination and postpone the supplemental to the August period.

Depending on the course, the supplemental result may or may not include the same proportion of class work as did the original grade. The instructor will announce the arrangements to be used for the course by the end of the change of course period.

2. Additional Work

In courses which are assessed at least in part by written term work, the instructor may choose to provide all students who receive a final mark of D, F or J in the course, and who are eligible for supplemental privileges, with the option of revising a paper or papers previously submitted, or of submitting further work in replacement of the original paper(s). The instructor will announce the availability and terms of any such additional work at the beginning of the course. The mark resulting from the revised or additional work will be recorded as a supplemental mark and will count only into the CGPA. In calculating the supplemental mark, the weight of the additional work will be equal to the weight given the work revised or replaced when the original mark was calculated. Normally, the supplemental mark must be submitted by the instructor by the end of the academic year (August 31).

In courses in which both a supplemental examination and additional work are available, the student may choose to do the additional work or write the examination or both. In the case where both are written, only one supplemental mark will be submitted, reflecting marks for both the supplemental examination and the additional work.

Written application to submit additional work in a course must be received at the Student Affairs Office by the first Friday in July. An application fee of $10 is payable for each course involved at the time of application. Consult the Student Affairs Office for further information.

Deferred Examinations

A student who, for reasons such as illness or family affliction, verified and accepted by the Stu-

dent Affairs Office, has been unable to write one or more examinations, may receive permission to write deferred examinations in their stead which shall be written in the next supplemental examination period. The Student Affairs Office must be informed as soon as possible after the examination of the reasons for absences. If the request is approved, an "L" will appear on the Report of Standing in place of a grade in such courses, followed by the grade obtained in the deferred examination after it has been written.

Reassessments and Rereads

Papers are marked and grades calculated and handled with considerable care. However, if students wish the calculation of marks checked (reassessment) or a formal final examination paper re-read, they should apply in writing to the Student Affairs Office.

Reassessment is done free of charge. If there is no change in the grade as a result of a reassessment, and if there was a formal final examination in the course, the student may then apply for a reread of the final examination paper, for which there is a $25 fee. Grades may be either raised or lowered as the result of a reread. Computer marked exams can be reassessed but not re-read.

Application for reassessments must be made by March 31 for courses ending in the Fall term and by July 31 for courses ending in the Winter term. Requests for reassessments or re-reads in more than one course per term will not be permitted.

Any request to have term work re-evaluated must be made directly to the professor concerned.

Credit by Examination

In certain exceptional cases students may apply to the Associate Dean to write a final examination in order to obtain credit in a course for which they were not registered (this is possible only in those courses where there is no other assessment except the final examination).

Special Facilities

Students with visual or other disabilities should consult the Student Affairs Office about the possibility of special examination facilities.

INCOMPLETE COURSES

If, in the instructor's opinion, there is sufficient reason to permit a delay in the submission of required term work, an extension of deadline of up to four months after the end of the course may be granted the student. In this case, the instructor will submit a grade of "K" (incomplete). If a new grade is submitted within the deadline by the instructor, this will appear on the student's Faculty reports and verification forms following the K and will replace the K on the student's official transcript.

If the required work is not completed before the deadline the grade of KF will be recorded in the same way as the grade above. (KF denotes a failed course and has the same effect on the GPA as an F).

In exceptional circumstances, and with the approval of the Associate Dean, the four month deadline may be extended further, in which case the grade of "K*" will appear.

Students who have not, without accepted excuse, participated or written the final examination in a course for which they were registered shall be given a grade of J (absent). In the calculation of the GPA, this is treated as an F.

PLAGIARISM

In submitting work in their courses students should remember that plagiarism is considered to be an extremely serious offence. If students have any doubt as to what might be considered "plagiarism" in preparing an essay or term paper, they should consult the instructor of the course to obtain appropriate guidelines.

Detailed guidelines for the Faculty of Arts were adopted in April, 1979 and are available, upon request, from the Student Affairs Office.

The Code of Student Conduct and Disciplinary Procedures includes sections on plagiarism and cheating. Consult the Student Affairs Office for details.

WITHDRAWAL FROM THE UNIVERSITY

The responsibility for initiating withdrawal rests solely with the student. Neither notification of the course instructors nor discontinuance of class attendance will suffice. A student who wishes to withdraw officially from the University during the academic year must secure permission from the Student Affairs Office. The appropriate form will be supplied. Students considering withdrawal are strongly urged to consult their Academic Adviser before making a final decision.

The date on which a withdrawal is approved by the Student Affairs Office is the official date of withdrawal, even if the student stopped attending lectures earlier. Fees are refundable under conditions outlined on page 9.

READMISSION

Students who have withdrawn from their Faculty or who have not re-registered for a term or more must make application in writing to the Associate Dean (not to the Admissions Office) to be readmitted, stating the reasons for their absence from the University and giving a sum-

mary of their activities during that period.

Students who withdrew because of illness should provide some indication that they are ready to resume studies.

SUMMER SESSION

The Summer Session runs from May to August. Full courses (6 credits) are offered starting May 3, 1982 and June 1, 1982 and are eight weeks long; half courses (3 or 4 credits) start on May 3, 1982, June 1, 1982 and July 5, 1982 and are four weeks long. Extra time is allowed for writing assignments in courses requiring them. Please consult the *Summer Session Announcement* for more details.

Courses taken during the Summer Session by students registered in a degree program are considered in the same way as courses taken during the regular session, and enter into the calculations of the students CGPA, credit total and standing. Students may enrol for no more than 12 credits during the summer, at McGill or at other universities, except by special permission of the Associate Dean. Arts students may not take more than 3 credits in a four-week session without special permission from the Associate Dean.

Full information concerning course offerings, applications, and requirements may be obtained from:

Summer Session Office,
McGill University,
F. Cyril James Building,
845 Sherbrooke St. West,
Montreal, PQ, Canada,
H3A 2T5.
(514) 392-6740.

2 FACULTY OF ARTS

ADMINISTRATIVE OFFICERS

University

DAVID L. JOHNSTON, A.B. (Harv.), LL.B.(Cantab. & Queen's), LL.D. (L.S.U.C.)
Principal and Vice-Chancellor

S.O. FREEDMAN, B.Sc., M.D., C.M. (McG.), F.R.C.P.(C), F.A.C.P., F.R.S.C.
Vice-Principal (Academic)

JOHN ARMOUR, AACCA **Vice-Principal (Administration and Finance)**

E.J. STANSBURY, M.A., Ph.D.(Tor.) **Vice-Principal (Planning and Academic Services)**

G.A. MACLACHLAN, B.Sc., M.A.(Sask.), Ph.D. (Man.) **Vice-Principal (Research)**

L.E. LLOYD, B.Sc., M.Sc., Ph.D.(McG.)
Vice-Principal (Macdonald Campus)

COLIN M. McDOUGALL, D.S.O., B.A.(McG.)
Secretary-General

MICHAEL HERSCHORN, M.A., Ph.D.(McG.)
Dean of Students

JEAN-PAUL SCHULLER, B.A.(Ott.) **Registrar**

PEGGY SHEPPARD, B.Ed.(McG.), B.A.(Sir G. Wms.) **Director, Admissions Office**

ALTA ABRAMOWITZ, B.A., M.Ed.(McG.)
Director, Information & Liaison Office

MARIANNE F. SCOTT, B.A., B.L.S.(McG.)
Director, University Libraries

Faculty

M.P. MAXWELL, B.A. (Sir G. Wms.), M.A., Ph.D. (McG.) **Dean of the Faculty of Arts**

G.L. PIGGOTT, B.A. (West Indies), M.A., Ph.D.(Tor.) **Associate Dean of The Faculty of Arts**

KYRA EMO DAVIS, B.Sc.(McG.)
Coordinator, Academic Affairs and Secretary of the Faculty of Arts

JOAN HAGERMAN, B.A. (Bishop's) **Recorder**

ANGELINE LUCAS **Senior Adviser**

LILA WILLIS **Senior Adviser**

PROGRAM INFORMATION

The Faculty of Arts offers the Bachelor of Arts (B.A.) and the Bachelor of Social Work (B.S.W.) degrees.

DEPARTMENTAL MAJORS

The following majors are described in detail in the departmental entries in the Announcement.

ANTHROPOLOGY
ART HISTORY
CLASSICS
ECONOMICS
ENGLISH
FRENCH
GEOGRAPHY
GERMAN
HISTORY
ITALIAN
JEWISH STUDIES
LINGUISTICS
MATHEMATICS
PHILOSOPHY
POLITICAL SCIENCE
PSYCHOLOGY
RELIGIOUS STUDIES
RUSSIAN
SOCIOLOGY
SPANISH (see HISPANIC STUDIES)

B.A. INTERDISCIPLINARY MAJORS

AFRICAN STUDIES
CANADIAN STUDIES
CENTRE D'ETUDES CANADIENNES-FRANÇAISES
CENTRE FOR EAST ASIAN STUDIES
CLASSICS AND LINGUISTICS
ECONOMICS AND POLITICAL SCIENCE
HISTORY AND PHILOSOPHY OF SCIENCE
HISTORY AND POLITICAL SCIENCE
HUMANISTIC STUDIES
INDUSTRIAL RELATIONS
LATIN AMERICAN STUDIES
MIDDLE EAST STUDIES
MODERN LANGUAGES
MODERN LITERATURE
NORTH AMERICAN STUDIES

For further information on the above, consult the alphabetical listings in this Announcement.

B.A. HONOURS

The following Honours programs are described in detail in the departmental entries in this Announcement:

ANTHROPOLOGY
ART HISTORY
CLASSICS
EAST ASIAN STUDIES
ECONOMICS
ENGLISH
FRENCH
GEOGRAPHY
GERMAN
HISTORY

HISTORY AND PHILOSOPHY OF SCIENCE
ITALIAN
JEWISH STUDIES
LINGUISTICS
MATHEMATICS
MIDDLE EAST STUDIES
PHILOSOPHY
POLITICAL SCIENCE
PSYCHOLOGY
RELIGIOUS STUDIES
RUSSIAN
SOCIOLOGY
SPANISH (see HISPANIC STUDIES)

JOINT HONOURS

Joint Honours programs are available in many related disciplines. Please consult departmental listings.

B.A. FACULTY PROGRAMS

MATHEMATICS AND COMPUTER SCIENCE

Mathematics 189-222A,B, 223A,B, or 245A,B, 315A,B, 317A,B, 318A,B, 323A,B, 324A,B, 327B, 328B; Computer Science 308-200A,B, 210A,B or 273 A,B, 300A,B or 302A, 315A,B, plus 9 credits from Computer Science, plus 6 credits selected in consultation with the Adviser from any other computer science or mathematics course at the 300 level or above.

54 credits; consult the Mathematics Department for an Adviser.

MATHEMATICS AND PHILOSOPHY:

Mathematics 189-217A: 218B; 245A,B; 318A,B; 328B; 348A, 349B; One of Mathematics 189-222A,B, 314A,B, 323A,B, 324A,B; Three additional credits in Mathematics. One of Philosophy 107-354A and 355B, 107-356A and 357B, 107-360A and 361B, 107-366A and 367B, and two full courses in Philosophy approved by the Department. Nine additional credits in Philosophy.

54 credits. (This faculty program leads to a B.A. degree. Consult the Department of Philosophy for an Adviser).

PSYCHOLOGY GENERAL:

Students are required to complete *four* of the basic psychology courses: Learning, Motivation, Perception, Thinking, and Laboratory Methods, during the U1 or U2 years, for a total of *twelve credits.*

Students must complete any *two* of the one-year six-credit sequences which introduce specialized areas of psychological knowledge, for a total of *twelve credits.*

An additional *twelve credits* of psychology electives must be completed, of which *at least six credits* must be at the *400 level* and the *remainder* at the *300 level.*

Finally, each student must to complete *eighteen additional credits* from departments other than psychology, selected from any within the University consistent with regulations of the Faculty of Arts. Students are strongly advised to take these credits outside the Department of Psychology. A minimum grade of "C" is required in all 54 credits required for a Faculty degree in Psychology. *Nine* of these credits should be at the *300 level or higher.*

MINOR PROGRAMS

COMPUTER SCIENCE (see under Computer Science in the Science section of this Announcement).

ENVIRONMENTAL STUDIES (see under Environmental Studies in the Science section of this Announcement).

WOMEN'S STUDIES (see under Women's Studies in the Arts section of this Announcement).

DEPARTMENTS AND CENTRES OFFERING PROGRAMS IN THE FACULTY

African Studies Program, Leacock Building, Rm. 733
Anthropology, Leacock Building, Rm. 719
Art History, Arts Building, Rm. W225
Canadian Studies Program, Leacock Bldg., Rm. 812
Centre d'Etudes Canadiennes-Françaises, 3475 Peel Street, Rm. 201
Centre for East Asian Studies, 3434 McTavish St.
Classics, Leacock Building, Rm. 517
East Asian Languages and Literatures, 3434 McTavish St.
Economics, Leacock Building, Rm. 434
English, Arts Building, Rm. 155
English and French Language Centre, 3438 McTavish St., Rm. 202
French Language and Literature, Peterson Hall, 3460 McTavish Street, Rm. 100
Geography, Burnside Hall, Rm. 513
German, Samuel Bronfman Bldg., 1001 Sherbrooke St. West, Rm. 613
Hispanic Studies, Samuel Bronfman Bldg., 1001 Sherbrooke St. West, Rm. 680
History, Leacock Building, Rm. 625
History and Philosophy of Science Program, Samuel Bronfman Bldg., 1001 Sherbrooke St. West, Rm. 559
Industrial Relations, Samuel Bronfman Bldg., 1001 Sherbrooke St. West, Rm. 514
Italian, Samuel Bronfman Bldg., 1001 Sherbrooke St. West, Rm. 637
Jewish Studies Program, 3511 Peel Street, Rm. 102
Linguistics, Samuel Bronfman Bldg., 1001 Sherbrooke St. West, Rm. 584

Mathematics, Burnside Hall, Rm. 1005
Middle East Studies Program, Leacock Building, Rm. 734 or 421
North American Studies Program, Leacock Building, Rm. 434
Philosophy, Samuel Bronfman Bldg., 1001 Sherbrooke St. West, Rm. 559
Political Science, Leacock Building, Rm. 434
Psychology, Stewart Biology Building, Rm. W8/1 or W8/8
Religious Studies, William and Henry Birks Bldg., 3520 University Street, Rm. 101
Russian and Slavic Studies, Samuel Bronfman Bldg., 1001 Sherbrooke St. West, Rm. 660
School of Social Work, 3506 University Street, Rm. 300
Sociology, Leacock Building, Rm. 709

AFRICAN STUDIES PROGRAM

Advisers - D. ARONSON *(Anthropology);* M. BISSON *(Anthropology);* M. DORSINVILLE *(English);* M.J. ECHENBERG *(History);* J. GALATY *Chairman, African Studies Committee (Anthropology);* P.C.W. GUTKIND *(Anthropology);* F. KUNZ *(Political Science);* A. MAUGEY *(French);* R.S. McCALL *(Philosophy)*

Leacock Building, Room 733, Tel. 392-5181.

The "Interdisciplinary Area Major" in African Studies is designed for those students who wish to take advantage of the growing resources at McGill, and elsewhere in the Montreal area, for the pursuit of an interdisciplinary approach to the African continent.

Students wishing to major in African Studies should consult one of the advisers (see above) at the beginning of their first academic year. While pursuing their Major, they will be expected to concentrate as well in a regular discipline of the Faculty. Disciplinary specialization is not, however, restricted to those for which an Adviser is listed.

The Major consists of 54 credits (9 full courses or the equivalent), including African Studies 111-599D in the final year. 45 credits must be selected from courses listed below while 9 credits should be selected in consultation with Major Advisers. One or two relevant prerequisites may be included in the total, and the seven or eight remaining full courses should include courses from at least three departments (for full descriptions and prerequisites of courses see listings under individual departments.)

Training in an African language is encouraged, and may form a part of the Major program. Formal training is available at McGill in Arabic. In addition, tapes for the study of Swahili and other African languages, in a modular course, may be arranged through the Linguistics Department and the Language Laboratory in Peterson Hall.

If courses listed below are not available, modifications in, or additions to the program may be made with approval of the African Studies Committee. The attention of African Studies majors should be drawn to the following divisions of the university which involve significant African content: Centre for Developing Area Studies; Comparative Education; Geography; the Islamic Institute; Religious Studies. Special Topics (111-480A, 481B) on subject matter not covered in available courses may be arranged with the permission of program advisers and instructors.

The culmination of the Major is the Research Seminar, 111-599D.

COURSES

Consult departmental listings for more complete descriptions. Not all courses are available in any given year.

AFRICAN STUDIES

111-480A, 481B SPECIAL TOPICS. (3 credits each. Prerequisite: completion of all available courses relevant to the topic, and permission of the instructor and program adviser). Supervised reading in advanced special topics in African studies under the direction of a member of staff.

111-599D RESEARCH SEMINAR IN AFRICAN STUDIES. (6 credits; Prerequisite: Open to Area Majors in good standing, graduate students with a research interest in Africa, and to others by permission). An interdisciplinary research seminar on topics of common interest to staff and students of the African Studies Program. As part of their contribution, students will prepare a research paper under the supervision of one or more members of the staff.
Staff

ANTHROPOLOGY

151-215A	Peoples and Cultures of Africa. (3 credits).
151-216B	Culture and Social Change in Modern Africa. (3 credits).
151-345A	Prehistory of Africa. (3 credits).
151-415A	Problems in African Anthropology. (3 credits).

ECONOMICS

154-410 to 412	Economic Development of a Selected World Area. (3 credits each).
154-413 to 416	Selected Topics in Economic Development. (3 credits each).

ENGLISH

110-320D	Third World Literature. (6 credits).
110-421B	African Literature. (3 credits).

FRENCH

125-368A Littérature noire d'expression française. (3 credits).

GEOGRAPHY

183-328B Geographical Perspectives on African Environments. (3 credits).

HISTORY

101-200D A History of Africa. (6 credits).
101-430D France and the Africans. (6 credits).
101-480D Capitalism and Empire: the World in the Age of European Domination. (6 credits).
101-486D Seminar: Africa and the Two World Wars. (6 credits).

POLITICAL SCIENCE

160-324D Politics and Government in Africa. (6 credits).

ANTHROPOLOGY (151)

Professors - PETER C.W. GUTKIND; FUMIKO IKAWA-SMITH; RICHARD F. SALISBURY; PHILIP CARL SALZMAN *(on leave 1982-83);* BRUCE G. TRIGGER *(on leave 1983)*
Associate Professors - DAN R. ARONSON *(Chairman);* DONALD ATTWOOD; LEE DRUMMOND *(on leave 1982-83);* MARGARET LOCK *(Joint appointment with Humanities and Social Studies; in Medicine);* JEROME ROUSSEAU
Assistant Professors - MICHAEL S. BISSON; CARMEN LAMBERT; JOHN GALATY

Room 719, Stephen Leacock Building, 855 Sherbrooke St. West, Montreal, PQ, H3A 2T7. Telephone 392-5179.

The Honours and Major programs in Anthropology provide a liberal arts education which emphasizes the similarity and diversity of human behaviour, understanding of social and cultural systems, and the processes of socio-cultural changes from man's origins to the present day. Although neither the Honours nor the Major programs provide a professional training geared to specific jobs, they may serve as a useful background for those who are planning a career in law, foreign service, community organization, public administration, journalism, and teaching and research in social sciences and humanities. Needless to say, to be a qualified professional in most of these fields requires further training at professional or graduate schools.

While the Major program allows a greater freedom to choose from courses offered by other departments to suit the student's needs and interest, the Honours program provides a greater concentration in anthropology with substantial breadth and depth. It should be noted that the completion of an Honours program is frequently required for admission into graduate or professional schools.

MAJOR PROGRAM

There is no prerequisite for admission to the Major program in Anthropology. The program requires that the student take at least 54 credits (18 courses) in not more than four Departments (including Anthropology) which together form a coherent approved program of study. Only 27 of these credits may be from 200 level courses.

At least 36 of the credits must be in Anthropology courses, and these must include at least three credits from among the "core courses" (151-352B, 355B, 357B, 358A, 359A), and at least nine credits from "advanced courses" (400 level).

For further information contact the Department office (392-5179).

HONOURS PROGRAM

In order to continue in the Honours program students must meet the academic standing requirements set forth by the Faculty, and in order to complete the Honours program in Anthropology in the final, graduating year, the grade-point average for the preceding year (usually the U2 year) must be 3.2 or higher for all courses as well as for anthropology courses.

An Honours degree in Anthropology will be granted to a student who has satisfied the requirements of the program and who has an average of 3.2 or better for all the anthropology courses credited towards the program and for all the courses taken during the last two years (usually U2 and U3 years). A First Class Honours degree in Anthropology will be given to a student with a CGPA and an average for all anthropology courses of 3.7 or better.

An Honours student in Anthropology is required to take 20 anthropology courses (60 credits). Up to three of the courses (9 credits) can be advanced courses given by other departments, if they are directly related to the student's focus of study within anthropology and are approved by the student's adviser on the Undergraduate Committee of the Anthropology Department. Not more than 21 credits may be taken at the 200-level in the program.

The 20 anthropology courses should include at least three of the "core courses" (151-352B, 355A, 357B, 358A, 359A); and 151-462A, 463B and/or 464D (in which an honours project is prepared); and at least three other "advanced courses" (400 level courses).

The following guidelines represent an ideal program recommended, though not required, for Honours students. It is recommended that students gain a comprehensive background in

anthropological methods and theory by taking one history of theory course (151-352 or 359), two courses dealing with social and cultural theory (343, 344 and 355), one course in anthropological research (358), one course in research methods (357 or 461) and one course in quantitative methods to be taken outside of anthropology (Sociology 166-350A, Psychology 204-204A, Economics 154-317D, or Mathematics 189-203A). In order to acquire a desirable regional background, students are encouraged to take two area courses, ideally pertaining to two distinct geographical concentrations.

Each student has the opportunity to construct within the Honours program a concentration focused on a particular field of interest, such as prehistory and evolution, cultural systems, social and political organization, or on a particular geographical area, such as Africa, North America, South America, Middle East or South Asia. Such concentration is made possible by the use of the "Special Topics" courses, in which a student works under the supervision of a staff member in an area not covered by courses currently given. Special Topics courses can be coupled, concurrently or sequentially, with regular courses, under the supervision of the instructors of the regular courses, in order to allow more intensive work in the area covered by regular courses. Papers or projects can be submitted to two or more courses, provided that prior written arrangements have been made with the approval of the student's adviser.

In the *first year* of the program, students should take introductory courses from a range of topics available at the 200-level. Some 300-level courses may also be taken; the History of Theory course (352B) is especially recommended for the first year. The objective of the first year is the development of a grasp of the scope of the anthropological discipline, and an exposure to a broad selection of topics.

In the *second year* of the program, students should begin to specialize, and should acquire knowledge of anthropological theories and methods, primarily by taking core courses and other relevant offerings. In the second term, students are encouraged to take at least one 400-level seminar and to begin consideration of a substantive topic and geographical region of specialization.

The *third year* of the program should advance the process of specialization within the discipline, through 400-level seminars and preparing an Honours thesis, based on Independent Research. Permission of an adviser is necessary in order to register for Independent Research in the Fall, so students should approach staff before that time to discuss possible topics and gain approval. The required thesis may represent a six-credit full-year course (464D), or a three-credit course, taken in either the Fall Term (462A) or the Winter Term (463B).

For more information on the Honours program, consult an appropriate adviser on the Undergraduate Committee of the Department, through the Department Office (392-5179).

JOINT HONOURS PROGRAMS

Joint Honours programs are established with Art History, Classics (Classical Archaeology), Economics, English, Geography, History, Linguistics, Middle East Studies, Philosophy, Political Science, and Sociology. The Anthropology part of the requirements for these programs is the completion of 11 courses (33 credits) in Anthropology, which must include three of the "core courses" (see above for the Honours program), two "advanced courses", and 151-462A, 463B, or 464D in which an Honours project with an interdisciplinary approach is prepared, under the supervision of two instructors (one each from the two Departments concerned). Joint Honours students must also satisfy the same averages in Anthropology courses as Honours students (3.2 for Joint Honours, 3.7 for First Class Joint Honours). For more information on the Anthropology requirements of the joint Honours programs, contact the Department Office (392-5179) which will direct the student to an appropriate adviser on the Undergraduate Committee. For information on the requirements for the other discipline making up the Joint Honours program, consult the department concerned.

Course Descriptions

• *Denotes not offered 1982-83.*

FIRST LEVEL COURSES

These courses are normally taken during the first year of study in Anthropology and are open to all University students. There are no prerequisites for this group of courses.

151-201A PREHISTORIC ARCHAEOLOGY. (3 credits). Examination of the origin of cultural behaviour and culture as an adaptive mechanism from the earliest times to the rise of the first civilizations in the Old and New Worlds. The implications of these data concerning the nature of man and his future development will be considered.
Professor Bisson

151-202A COMPARATIVE CULTURES. (3 credits). The comparison of human societies at different levels of scale and complexity: hunting bands, horticultural and pastoral tribes, agrarian states, and industrial states. How differences in the scale and complexity of social organization and cultural systems relate to different modes of subsistence.
Professor Attwood

151-203B HUMAN EVOLUTION. (3 credits). An examination of man's biological origins and the significance of his physical diversity. The behaviour of non-human primates, primate evolution, the role of culture in human evolution, racial classifications, the dynamics and behavioural significance of racial variation. (Not open to students who have previously taken 151-303B).
Professor Bisson

- **151-204A SYMBOL SYSTEMS AND IDEOLOGIES.** (3 credits). Consideration of symbol systems and their position among various systems of communication. Analysis of the meanings of symbols and the interaction between symbol systems and other aspects of social life (political, economic, etc.). The analysis of ideologies as the images which people have of their own societies. The influence of class interests, ethnicity, etc., on such ideologies.
Professor Drummond

151-206B CULTURE AND ADAPTATION. (3 credits). An ecological approach to the study of human society and culture, focussing on anthropological studies and the development of anthropological ecology.
Staff

151-207B FOOD AND NUTRITION IN PREHISTORIC SOCIETIES. (3 credits). Reconstruction of patterns of food intake by prehistoric peoples; the range of resources used for food, and their relative importance; equipment and technique used in procurement and processing food; food consumption as technological tradition and as part of a cultural system.
Professor Ikawa-Smith

151-209A ANTHROPOLOGY OF RELIGION. (3 credits). Nature and function of religion. Systems of belief; the interpretation of ritual. The relation of religion to social organization. Religious change.
Professor Rousseau

151-210B THE ANTHROPOLOGY OF THE ARTS. (3 credits). The arts in cultural context, with special emphasis on non-Western aesthetic systems, the creative process, the purposes and "meanings" of artistic production, and the effects of foreign influences in indigenous art. Examples will be drawn primarily from the plastic and verbal arts of Africa.
Professor Aronson

151-212B ANTHROPOLOGY OF DEVELOPMENT. (3 credits). Processes of developmental change, as they affect small communities in the Third World and in unindustrialized parts of developed countries. Problems of technological change, political integration, population growth, industrialization, urban growth, social services, infrastructure and economic dependency.
Professor Salisbury

151-214B AN INTRODUCTIONTO PSYCHOLOGICAL ANTHROPOLOGY. (3 credits). A survey of current theories and methods employed in psychological anthropology. Some areas considered are: cross-cultural studies of socialization and personality development; cultural factors in mental illness; individual adaptations to rapid socio-cultural change. (Not open to students who have taken 151-314B).
Professor Galaty

151-215A PEOPLES AND CULTURES OF AFRICA. (3 credits). An ethnographically-based survey of African cultures. Geographical and historical backgrounds; levels of techno-environmental complexity; patterns in African social organization, economy, politics, religion, and art. Problems of cultural autonomy and structural dependence of contemporary rural peoples. (Not open to students who have previously taken 151-215D).
Staff

151-216B CULTURE AND SOCIAL CHANGE IN MODERN AFRICA. (3 credits). The impact of colonialism on African societies; changing families, religion, arts; political and economic transformation; migration, urbanization, new social categories; social stratification; the social setting of independence and neo-colonialism; continuity, stagnation, and progressive change. (Not open to students who have previously taken 151-215D).
Professor Aronson

151-221A INTRODUCTION TO URBAN ANTHROPOLOGY. (3 credits). Introduction to the comparative analysis of urbanization in Africa, Asia and Latin America; rural-urban migrations; the demography and institutional structures or urban areas; tribalism in towns; status, class and elites in towns; family structure; urban network analysis; urban-based associations; the role of the city in national development. (Not open to students who have taken 151-321A).
Professor Gutkind

151-224B WOMEN IN CROSS CULTURAL PERSPECTIVE. (3 credits). Introduction to the comparative study of women in society. A wide range of anthropological studies are examined along with theoretical models regarding changes in women's position. Women in simple and complex societies; women and social change; problems of women in developing societies.
Staff

151-227A HEALTH AND ILLNESS IN CROSS-CULTURAL PERSPECTIVE. (3 credits). Anthropological approaches to medical systems, health and disease. Comparison of western medical beliefs with East Asian and shamanistic traditions. Social epidemiology and cross-cultural approaches to the management of stress including pain and death. Transcultural psychiatry. Medical systems in competition.
Professor Lock

151-236B NATIVE PEOPLES OF NORTH AMERICA. (3 credits). Analysis of the patterns and processes of culture change within selected groups of North American Native People. Emphasis upon conditions arising from contact and its impact on social, economic and political patterns of adaptation.
Professor Lambert

INTERMEDIATE COURSES

Prerequisite: One anthropology course which is, in some cases, specified.

- **151-308B POLITICAL ANTHROPOLOGY.** (3 credits). The study of political systems and political processes. Conflict and its resolution. The emphasis of the course will be on local-level politics and non-industrial societies.
Staff

151-313A SOCIAL INSTITUTIONS OF THE EARLY CIVILIZATION.S (3 credits). A comparative study of the differing social, economic and political institutions of the early civilizations in Mesopotamia, Egypt, India, China and the New World; their historical interconnections and development from Neolithic times to the early historic period.
Professor Trigger

- **151-316B ANTHROPOLOGY OF COMPLEX SOCIETIES.** (3 credits). Selected topics in the study of complex societies; rural-urban continuum migration and adaptation to urban life, poverty culture, cultural scenes. Evaluation of anthropological approaches to the study of complex society.
Staff

- **151-317B THE PREHISTORY OF NORTH AMERICA.** (3 credits; *Prerequisite:* 151-201A or 151-203B or equivalent). Peopling of the New World; cultural adaptations of grasslands, woodland, desert and maritime environments; factors that favoured the shifts in subsistence activities, settlement patterns and social organization.
Staff

151-320B SOCIAL INEQUALITY. (3 credits). Economic, political, ritual and ideological aspects of inequality, especially in pre-industrial societies. The development of inequality. Inequality of sex and age; hierarchies; stratification systems (e.g. estates, castes, ethnic groups). Class and class consciousness. Political mobilization and inequality: the state, colonialism and imperialism.
Professor Rousseau

151-324B ECONOMIC ANTHROPOLOGY. (3 credits). Systems of production, distribution, and consumptionin non-industrial societies. Social relationships and economic behaviour as viewed from the perspective of the individual, or small community, in peasant and industrial societies. (Not open to students who have taken 151-424B).
Staff

- **151-325A PEOPLES OF THE CARIBBEAN.** (3 credits). A survey of Caribbean societies and their cultural systems,using selected case studies; inter-ethnic relations, the emergence of creole culture(s), family structure, migration, national identity, etc. are discussed as elements of sociocultural change processes shaping the Caribbean.
Professor Drummond

151-326B NATIVE PEOPLES OF SOUTH AMERICA. (3 credits). Ethnographic survey of the native peoples of South America and discussion of some of the major themes in South American ethnology including the present political situation of the Indians.
Staff

- **151-327A PEOPLES OF SOUTH ASIA.** (3 credits). A survey of the peoples and cultures of the Indian sub-continent. Detailed consideration will be given to agrarian social structure and stratification (in terms of caste, class and power), with emphasis on the changes caused by colonialism and modernization.
Professor Attwood

- **151-330A JAPANESE SOCIETY AND CULTURE.** (3 credits). Analysis of Japanese society and culture at both macro and microlevels. Brief historical introduction and survey of the religious and philosophical background of modern Japanese values; family structure and patterns of Inter-personal behaviour; self- identity, independence versus dependency needs; group dynamics, achievement motivation. Discussion of modernization; religion and the arts; Western-style and traditional medicine; deviancy: suicide, delinquency.
Professors Lock and Yoneyama

151-331A PREHISTORYOF EAST ASIA. (3 credits). Comparative study of prehistoric hunting and gathering cultures in China, Japan, Korea, Mongolia and Eastern Siberia; origins and dispersal of food production; cultural processes leading to the rise of literate civilizations in certain regions of East Asia.
Professor Ikawa-Smith

151-333B CLASS AND ETHNICITY: HISTORY, STRUCTURE, AND FUNCTION. (3 credits). The genesis and development of ethnic groups and social classes; modes of production, social formations and the question of "consciousness." The functions of ethnicity and class in political conflict, with special reference to the Third World.
Professor Gutkind

- **151-340B MIDDLE EASTERN SOCIETY AND CULTURE.** (3 credits). The ethnography and social anthropology of the Middle East with special at-

tention to life at the community and regional levels and to community-society relations. Such questions as "urban-peasant-tribe" relations, and land adaptation, the role of folk Islam, and the place of women. (Not open to students who have taken 151-445B).
Professor Salzman

- **151-343A CULTURE AND COERCION: SOCIAL CONTROL IN PREINDUSTRIAL SOCIETY.** (3 credits). An inquiry into the factors that contribute to the maintenance of the social order. Socialization, reciprocity, conflict resolution, and coercion are among the elements examined. (Not open to students who have taken 151-353A).
Professor Salzman

- **151-344A SOCIAL ORGANIZATION.** (3 credits. Comparative study of human group formation; ethnicity. The role of kinship and marriage in interpersonal relations. Social stratification. (Not open to students who have taken 151-354A).
Staff

- **151-345A PREHISTORY OF AFRICA.** (3 credits). This course will investigate the archaeological evidence for the evolution of culture in Africa from the beginning of the Paleolithic through the Iron age. The emphasis will be upon changes in economic, social and political organization as reflected in selected archaeological sites.

151-346B AGRARIAN SOCIETY IN TRANSITION. (3 credits; Prerequisite 151-212B or permission of instructor). A case study approach to rural development in the Third World. Political and economic transformation depends on peasant societies; consideration given to determinants of poverty, changing class structure, population pressure, the effects of commerce, urbanization and the sources of political unrest.
Professor Attwood

- **151-347A PALEOLITHIC CULTURES OF EUROPE.** (3 credits; Prerequisite: 151-201 or the consent of the instructor). Students must also have a reading knowledge of French. The Stone Age cultures of Europe from about 800,000 B.C. to the beginnings of agriculture at about 10,000 B.C. Archeological sequences of the major geographic subdivisions of Europe in the light of changing human adaptations. Laboratory sessions. (Not open to students who have taken 151-301A).
Professor Bisson

CORE COURSES

Restricted to Honours Joint Honours and Major students in anthropology and those with the permission of the instructor.

151-352B HISTORY OF ANTHROPOLOGICAL THEORY. (3 credits). Exploration in the history of anthropological theory; schools, controversies, intellectual history, sociology of knowledge. (Not open to students who have taken 151-302 or 402).
Staff

151-355A THEORIES OF CULTURE AND SOCIETY. (3 credits). Contributions to contemporary anthropological theory; theoretical paradigms and debates; forms of anthropologicial explanation; the role of theory in the practice of anthropology; concepts of society, culture and structure; the development of analytical concepts of small-scale and non-Western societies; cultural evolution and relativity.
Professor Galaty

151-357B ARCHAEOLOGICAL METHODS. (3 credits). The collection of materials in field investigations and their analysis to yield cultural information. The processes of inference and reconstruction in archaeological interpretation.
Professor Bisson

151-358A INTRODUCTION TO RESEARCH. (3 credits). The nature of anthropological research as evidenced in monographs and articles; processes of concept formation and interpretation of data; the problem of objectivity.
Professor Salisbury

151-359A HISTORY OF ARCHAEOLOGICAL THEORY. (3 credits; *Prerequisite:* 151-201B, or 151-203A or permission of instructor). A systematic investigation of the theories that have guided the interpretation of prehistoric archaeological data since the time of Christian Thomsen; the relationship between these theories and the development of archaeological techniques; their relationship to theoretical developments in the other social sciences.
Professor Trigger

READING COURSES

151-380A, 151-381B, 151-382A, 151-383B SPECIAL TOPICS. (3 credits each, *Prerequisite:* Permission of instructor). Supervised reading in special topics under the direction of a member of the staff.
Staff

ADVANCED COURSES

Prerequisite: at least one 300-level anthropology course, which, in some cases, is specified.

151-403B CURRENT PROBLEMS IN ARCHAEOLOGICAL THEORY. (3 credits; *Prerequisite:* 151-356A or 151-357B). A seminar dealing with current issues concerning reconstruction of socio-cultural systems from archaeological data. Topics include "economic vs. cultural models", the "systemic approach," ecosystem analysis, problems of taxonomy and classification, and quantitative methods.
Professor Ikawa-Smith

- **151-404B TOPICS IN PSYCHOLOGICAL ANTHROPOLOGY.** (3 credits; Prerequisite: 151-314A and consent of instructor). Each year one or two problems in psychological anthropology will be discussed and analyzed in depth, for example the development of adolescent identity in a series of cultures or the effects of different household residence patterns on children's development.
Staff

- **151-406A TOPICS IN CULTURAL ECOLOGY.** (3 credits; Prerequisite: 151-206B or permission of the instructor). One aspect of society and culture – such as division of labour, congnition, population size and density, authority structures, religion, and socialization – will be examined from an ecological point of view.

- **151-412A SEMINAR ON CONTEMPORARY ANTHROPOLOGICAL THEORY.** (3 credits). An exploration of major contemporary theoretical approaches in socio-cultural anthropology. Important works by the proponents of these approaches will be closely examined. *Topic for 1981:* Social and cultural dynamics, processes of change, dialectics.
Professor Salzman

- **151-415A PROBLEMS IN AFRICAN ANTHROPOLOGY.** (3 credits; *Prerequisite:* 151-215A, 151-216B or consent of the instructor). A detailed examination of the peoples and cultures of a major region of Africa, with attention to problems in ethnology, social change and development. *Topic for 1981:* East Africa.
Professor Galaty

- **151-421B TOPICS IN URBAN ANTHROPOLOGY.** (3 credits; *Prerequisite:* 151-221A, 151-321B or consent of the instructor).
Professor Aronson

- **151-422A HISTORY, IDEOLOGY AND THEORY IN SOCIAL CHANGE AND MODERNIZATION OF NON-WESTERN SOCIETIES.** (3 credits). Socio-cultural perspectives on Colonialism and policies; their impact on preindustrial societies; the structure and dialectic of modernization processes and their impact, ideology and discontent.
Professor Gutkind

151-423A IDEOLOGY AND CONCEPTS IN SOCIAL ANTHROPOLOGY. (3 credits. *Prerequisite:* Honours or major status or permission of instructor). Ideology and Social Science Theory in relation to problem formation in Social Anthropology; the spill-over from romanticism, imperialism, colonialism, neo-colonialism and radicalism to the outlook and problems studied by social anthropologists, traditional limits and the "New Anthropology". Multi- and interdisciplinary studies.
Professor Gutkind

- **151-424B ANTHROPOLOGY AND MARXIST ANALYSIS:** (3 credits; Prerequisite: At least two basic Anthropology courses – one must be 302B, or permission of the instructor). A survey of the major contributions to Marxist Anthropology by relatively recent writers, plus reading of the most basic writings by Marx most directly relevant and the various interpretations of these.
Professor Gutkind

- **151-425A ADVANCED TOPICS IN ECONOMIC ANTHROPOLOGY.** (3 credits). Discussion of selected topics in modern economic anthropology.

- **151-427B SEMINAR ON SOCIAL CHANGE IN SOUTH ASIA.** (3 credits; *Prerequisite:* a course with South Asian content, such as 151-327A, 151-308A, 160-322A, 154-301B, 260-451D; or permission of the instructor). Aspects of social change in modern India: caste and ethnic movements, religious movements, agrarian movements, social reformism; rural economic development; factions and parties, local elites. Colonialism, nationalism, and development.
Professor Attwood

151-430B SEMINAR IN SYMBOLIC ANTHROPOLOGY. (3 credits; *Prerequisite:* 151-204A, 151-355B, or permission of instructor). Advanced topics in the use of symbolic theory within anthropology, including culturology and structuralism; the use of semiotic models of society, with perspectives on the relation of structure to process, culture to praxis, and ideology to society; the relevance of epistemology, phenomenology and linguistic philosophy for the study of socio-cultural phenomena.
Professor Galaty

- **151-431A PROBLEMS IN EAST ASIAN ARCHAEOLOGY.** (3 credits; Prerequisite: 151-331A or permission of instructor). Critical examination of major issues in East Asian archaeology. Focus may vary from year to year. Possible topics include the concept of the "two-culture theory" for the Palaeolithic era of East Asia; relative roles of North China and Southeast Asia for the Neolithic beginnings; and the nuclear era vs. local evolution models for socio-cultural transformations in East Asia.
Staff

- **151-432B CONTINUITIES IN CONTEMPORARY JAPAN.** (3 credits; Prerequisite: 151-330 or 151-331). Detailed examination of selected topics on contemporary Japanese society. Topics may include the nature of urban centres in historical perspective, social networks in rural-urban complexes, religion and the arts.
Professor Yoneyama

- **151-435B ETHICAL ISSUES IN SOCIAL ANTHROPOLOGICAL RESEARCH.** (3 credits; prerequisite: one 300-level anthropology course or permission of instructor). A survey of recent literature produced primarily by Anthropologists. Issues to be covered include: What are ethical issues? Why and how to they arise in fieldwork? The relation of theory to praxis. Alleged objectivi-

ty vs ideological issues. What is partisan Anthropology? The pros and cons of contract research. Codes of ethics published by professional Work Group for Indigenous Affairs, Survival International, Minority Rights Group, Society for Social Responsibility in Science. .).
Professor Gutkind

- **151-436B SEMINAR ON NORTH AMERICAN NATIVE PEOPLE.** (3 credits; *Prerequisite:* 151-236B and 183-236A). A detailed examination of selected contemporary problems.
Professor Lambert

151-437B ANTHROPOLOGICAL APPROACHES TO CULTURE CHANGE. (3 credits). Consideration of anthropological approaches to directed culture change through a survey and analysis of relevant case materials. History of directed culture change; introduction to theoretical, methodological and ethical issues involved in and deriving from studies of and participation in directed culture change. Role of anthropologists as initiators or participants in, and/or evaluators of directed culture change: past, present and future.
Professor Lambert

151-439A LOCAL POWER SYSTEMS, THE MARKET, AND THE STATE. (3 credits; open to non-Anthropology students with permission of the instructor). During the age of European imperialism, many formerly autonomous regions were incorporated into expanding state administrations and a world market system. What were the consequences of incorporation or of resistance against dependency? How has industrialization in some regions affected agricultural change in others?
Professor Attwood and von Eshen

- **151-440B SEMINAR IN THE ANTHROPOLOGY OF COGNITION.** (3 credits). The problem of knowledge; the nature of perception; the concept of mind; the relation between thought and language. The concept of meaning: communication, interpretation and symbolism. Social aspects of cognition; ideology.
Professor Rousseau

- **151-442B CULTURE IN COMPLEX SOCIETIES.** (3 credits; Prerequisite: 151-204A, 151-355B, or permission of instructor). The place of cultural systems of symbols in modern society. Images of class membership, ethnic stereotypes, notions of the modern family and sexual identity, and conceptions of work and play, as expressed in diverse cultural productions, including popular movies, television shows, advertising, voluntary associations, fashion, speech habits and styles, and forms of leisure activity.
Professor Drummond

151-446B APPLYING ANTHROPOLOGY: THE DIALECTIC OF THEORY AND DATA. (3 credits; Prerequisite: one 300 level social anthropology course). Analysis of the varying roles of anthropologists in applied situations, as evaluators, advocates, technical experts, or policy advisers. The utilization of theory, methods and data in each role.
Professor Salisbury

- **151-448B SETTLEMENT ARCHAEOLOGY.** (3 credits: *Prerequisites:* at least two, and preferably three lower level courses in anthropology, including 151-356A or 151-357B). Examination of theories that have been developed in recent years concerning human settlement and evaluate the utility of these theories for deriving a variety of cultural information from spatial distributions of archaeological data. Special attention will be given to factors affecting the evolution of settlement units, from which a more general theory of settlement may be derived.
Professor Trigger

- **151-450B THIRD WORLD PEASANTRIES: THE CHANGE FROM RURALITY TO URBAN PROLETARIANS.** (3 credits; *Prerequisites:* 151-308B or 151-354A, plus one area course, or permission of the instructor). Review of recent anthropological literature, as well as the approaches of social history and political economy, focusing on external and internal forces instrumental in transforming peasantries into urban proletarians in "Third World" nations. Analysis of fission and fusion processes, stratification, class, rural and urban protest and mechanisms of incorporation of small units in larger political domains.
Professor Gutkind

151-461A RESEARCH TECHNIQUES. (3 credits). Field techniques, interviewing, participant observation, projective, and other testing techniques such as genealogies and life histories, problems of field work, rapport, contact, role definition, culture shock, etc.
Professor Lambert

151-462A, 151-436B, 151-464D INDEPENDENT RESEARCH. (3, 3, and 6 credits respectively; *Prerequisites:* U3 Honours status and permission of the instructor). Supervised reading and preparation of a research report under the direction of a member of staff.
Staff

READING COURSES

151-480A, 481B, 482A, 483B, 484A, 485B SPECIAL TOPICS. (3 credits each. *Prerequisite:* Completion of all available courses relevant to the topic and consent of the instructor). Supervised reading in advanced special topics under direction of a member of staff.
Staff

JOINT GRADUATE – ADVANCED UNDERGRADUATE COURSES

Prerequisite: Permission of instructor.

- **151-547A EARLY PREHISTORY OF THE NEW WORLD.** (3 credits). Detailed examination of selected aspects of the early prehistory of the New World. Specific geographical areas or topical issues may vary from year to year. (Not open to students who have taken 151-447).
Staff

- **151-551B ADVANCED TOPICS IN ARCHAEOLOGICAL RESEARCH.** (3 credits). Examination and discussion of topics of current theoretical or methodological interest in archaeology. Topics will be announced at the beginning of term. (Not open to students who have taken 151-451).
Staff

- **151-552B PROBLEMS IN THE PREHISTORY OF EASTERN NORTH AMERICA.** (3 credits; *Prerequisite:* Permission of instructor). A survey of recent discoveries and theoretical developments relevant to understanding cultural development in the Eastern Woodland and Boreal Forest regions of North America in prehistoric times. Different problems will be examined each year, but in each class a wide range of topics will be covered.
Professor Trigger

ART HISTORY (123)

Emeritus Professor – WINTHROP JUDKINS
Professor – GEORGE GALAVARIS
Associate Professors – RIGAS BERTOS *(Chairman);* ROSEMARIE BERGMANN; THOMAS GLEN *(on leave 1982-83)*
Lecturers – FRANÇOIS DERY; TOM HOPKINS

Arts Building, W-225 (West Wing, top floor),
853 Sherbrooke St. West,
Montreal, PQ, H3A 2T6.
Telephone: 392-4977.

The Department of Art History at McGill is concerned almost exclusively with the historical-critical study of architecture, sculpture and the two-dimensional arts from ancient times to the present. These arts are treated as an illumination of history – as a visual embodiment and expression of the philosophical, religious, intellectual and social trends of the successive historical periods. The student is thus given an introduction to the richness, scope and significance of our historicla and cultural heritage. At the same time the monuments are treated both as products of creative expression and as objects of aesthetic quality, providing the student with a basis for both receptivity to artistic communication and sound critical judgement.

A single, introductory, non-professional studio course is offered primarily as a supplement to the historical-critical study of the subject.

The Department offers major, honours, joint honours and graduate programs. The major program provides a broad basis in the history and criticism of art, but at the same time retains considerable flexibility enabling the student to participate in the many other disciplines in the humanities and social sciences with which art history is characteristically related. The honours program, while almost equally flexible, offers a deeper and more comprehensive penetration of the subject and provides the necessary foundation for those intending to continue into graduate studies in the discipline. But it is intended also for the undergraduate desiring a more cohesive and challenging intellectual experience and development.

MAJOR IN ART HISTORY

There are no pre-University requirements for this program.

The student majoring in Art History will take at least 30 and not more than 36 credits in Art History, of which not more than 12 may be elected in the First year. 24 additional credits will be chosen with the approval of the Faculty Adviser. (Note: courses in studio practice cannot be counted towards the Major requirements).

Adviser: consult the Departmental office, Arts W-225, telephone: 392-4977.

HONOURS IN ART HISTORY

There are no pre-University requirements for this program.

To qualify for the Honours degree in Art History candidates must pass 36 credits, four Honours seminars (twelve credits), and the Honours comprehensive examinations.

In the first University year, the candidate will take at least 12, at most 18, Art History credits. In each of the second and third University years the student will normally take 12 Art History credits and two Honours seminars (3 credits each). At the end of the final University year, in addition to writing the final examinations in their Art History courses, Honours students, having prepared themselves in the areas not covered by their formal courses, must pass the Honours comprehensive written and oral examinations.

The passing mark for Honours standing in Art History is 70%. For promotion to the second university year, candidates must attain at least 70% in each of their first university year Art History courses and marks not below C in each of their other courses. Qualification for the Honours degree requires an average of 70% in all Art History courses and seminars taken, with not more than two of these in the C category and at least a C average in all non-Art History courses taken.

At present the Department can only accept up to ten honours candidates into the second University year.

Honours students intending to proceed to graduate studies will be encouraged to begin the study of a third language recommended by the Department. (Note: courses in studio practice do not count towards the Honours degree).

Adviser: consult the Departmental office, Arts W-225, telephone: 392-4977.

JOINT HONOURS

There are no fixed pre-University requirements for these programs.

Proposals by qualified students for Joint Honours studies in Art History and certain appropriately related subjects may be submitted for consideration jointly by the Chairmen of the Departments concerned.

Adviser: consult the Departmental office, Arts W-225, telephone: 392-4975.

Course Descriptions

• *Denotes not offered 1982-83.*

123-200D INTRODUCTION TO ART HISTORY. (6 credits). Survey of outstanding artistic achievements in painting, sculpture and architecture from the beginnings of civilization to the present. Designed to acquaint the general student with the most important monuments and creative personalities throughout the history of art, and to provide a solid foundation for students interested in a more intensive program of study within the Department.
Professor Bergmann and Staff

123-026D FUNDAMENTALS IN DRAWING AND PAINTING. (6 credits; No previous training or experience is expected). The purpose of the course is to develop the creative sensibilities of students by introducing them, through studio work, to basic principles of drawing, painting and sculpture.
Mr. Dery and Mr. Hopkins

NOTE: Enrolment in this course is limited to fifty students (two sections of twenty-five students each). All registered students must come to the first scheduled meeting of the section of their choice. Only then (not before) will selection, by lot, from among those present be made. Except by special consent of the instructor, supplemental assessments will not be given in this course.

• **123-210A INTRODUCTION TO THE ARTS OF EGYPT AND MESOPOTAMIA.** (3 credits). A survey of the arts in these countries from their origins down to the Hellenization of Egypt. Emphasis is placed on the relation of the arts to monarchy, religion, physical conditions and spiritual life.
Professor Galavaris

123-211A EARLY AND CLASSICAL GREEK ART AND ARCHAEOLOGY. (3 credits). A selective survey of the slow emergence of the visual arts in the Hellenic world after the Mycenean Age and their transformation, to the end of the fourth century. Emphasis is placed upon the cultural significance of this phase of Greek civilization for modern man.
Professor Galavaris

123-212B LATER GREEK AND ROMAN ART AND ARCHAEOLOGY. (3 credits). The spirit of the forms in the visual arts discussed as manifestations of a new world-view that became predominant from the time of Alexander's conquests to the appearance of Christian Art. Emphasis is placed on Rome's contribution to the classical tradition.
Professor Galavaris

• **123-222A RENAISSANCE AND POST-RENAISSANCE SCULPTURE.** (3 credits). European sculpture of the fifteenth through the nineteenth centuries with emphasis upon the works of the principal sculptors.
Professor Galavaris

123-223A EARLY RENAISSANCE ART INITALY. (3 credits). The emergence of a new concept of art in Italy during the 15th century expressed in the works of the most important artists of the period. Special consideration will be given to the relationship of the visual arts to the classical tradition and to contemporary literature, philosophy and social conditions.
Professor Bertos

123-224B HIGH RENAISSANCE ART IN ITALY. (3 credits). A systematic investigation of Italian art of the 16th century – one of the most important periods in art history. Attention will be given also to the relationof the visual arts to contemporary intellectual and social trends.
Professor Bertos

123-225B CANADIAN ART. (3 credits). Studies in the visual arts of Canada; their tradition, contributing influences and indigenous expression.
Staff

123-312D MEDIEVAL ART. (6 credits). Medieval man's world view as manifested in the Fine Arts and their relationship to other expressions of Medieval civilization such as religion and philosophy. The course begins with the art of the Early Church, continues with that of Byzantium, and concludes with the visual arts embodied in the "Medieval Cathedral". (Not open to students who have taken 123-312A or 123-313B).
Professor Galavaris

• **123-332A RENAISSANCE ARCHITECTURE.** (3 credits). An analysis of the influence of Renaissance culture and artistic theory upon European architecture in the 15th and 16th centuries. Particular emphasis will be given to the

evolution of the style in Italy and to the changing interpretation of antique architecture.
Staff

- **123-333D BAROQUE AND ROCOCO ARCHITECTURE.** (6 credits). A study of the evolution of the Baroque and Rococo styles and of the Classical reaction represented by Palladianism and the Neo-Classical Movement. Architectural design will be studied in the context of contemporary painting and sculpture, and theories of art. (Not open to students who have taken 123-333A).
Staff

123-334D EUROPEAN ART OF THE 17TH AND EARLY 18TH CENTURIES. (6 credits). The emergence of the Baroque in Italy, its development throughout Europe, and artistic tastes in the 18th century. Attention is given to the relationships betweenthe visual arts andother aspects of the intellectual, religious and social life of these centuries.
Professor Galavaris

123-335A NEOCLASSICISM AND ROMANTICISM. (3 credits). A study of painting and sculpture fromthe mid-18th through the mid-19th centuries in the context of the intellectual, social and political climate of the age. Particular emphasis is placed on the work of such major figures as David, Ingres, Delacroix, Canova and Friedrich.
Staff

123-336B REALISM, IMPRESSIONISM, NEOIMPRESSIONISM AND POST-IMPRESSIONISM. (3 credits). An investigation of the principal artistic movements in Europe during the second half of the nineteenth century.
Staff

123-337D MODERN PAINTING AND SCULPTURE. (6 credits). The modern movementin art; its late nineteenth century emergence, problems, character and place in the continuity of art history.
Staff

123-343B THE EMERGENCE OF RENAISSANCE ART IN NORTHERN EUROPE. (3 credits). The development from Late Gothic to Renaissance, principally through the rise of the Early Netherlandish school and its relation to French art, in the 14th and 15th centuries. The monuments are examined within the changing religious and social climate of the times. (Not open to students who have taken 123-343D).
Professor Bergmann

- **123-344B NORTHERN EUROPEANART OF THE 16TH CENTURY.** (3 credits). The specific character of Northern Renaissance Art will be studied with due consideration of its diversity against the background of Christian humanism and Protestantism. Emphasis is placed on the major German artists and the development of graphic art. (Not open to students who have taken 123-343D).
Professor Bergmann

- **123-347A TRADITION AND INNOVATION IN 19TH CENTURY ARCHITECTURE.** (3 credits). An historical review of European and North American architecture from 1750 to 1880, concentrating upon the major stylistic movements, Neo-Classicism and the Greek and Gothic Revivals, and the impact on design of social and technological change.
Staff

- **123-348B 20TH CENTURY ARCHITECTURE: IDEALS AND ACHIEVEMENTS.** (3 credits). An examination of the main themes of architectural theory and practice from 1880-1970. Emphasis will be placed upon important centres, such as Chicago and the Bauhaus, as well as such celebrated individuals as Frank Lloyd Wright, Mies van der Rohe and Le Corbusier.
Staff

123-349B THE ART OF THE PRINT. (3 credits). The historical development of the graphic arts in the west from the 15th through the 20th centuries with emphasis on the relation between print medium and artistic expression in such major graphic artists as Dürer, Rembrandt, Goya and Blake.
Professor Bergmann

- **123-414B WESTERN MEDIEVAL PAINTING.** (3 credits). (Also open to First-year graduate students). A systematic study of the important centres and media (book painting, fresco, stained glass, etc.) of Medieval "Painting" from Carolingian through High Gothic times. The works of art are studied in relation to the religious spirit and social climate in which they were created.
Professor Bergmann

123-430B EVOLVING CONCEPTS OF THE DISCIPLINE OF ART HISTORY. (3 credits). (Also open to First-year graduate students). The historical development of approaches and methods employed by art historians since the Eighteenth century. The emergence of Art History as a systematic discipline in the Humanities – its contributions, responsibilities and present status.
Professor Bertos

- **123-440A THE VISUAL LANGUAGE OF ARTISTIC EXPRESSION.** (3 credits). (Also open to First-year graduate students). A detailed analysis of the nature, technicalities and functions of the factors of Representation, Design and Medium, including their evolving historical development, in combination with a study of their interactive synthesis in the total work, including comparative examination of the principal extant interpretations of the synthesis factor.
Professor Judkins

HONOURS SEMINARS. (3 credits each). Honours candidates in their Second and Third University years will undertake special studies (the work consisting of recommended reading, written

papers and discussions) in certain of the following areas as advised by the Department. (6 credits in each year). Seminar offerings for the current session are obtainable from the Department office).

123-362/462A STUDIES IN ANCIENT AND EARLY MEDIEVAL ART. (3 credits).
Professor Galavaris

123-363/463B STUDIES IN ANCIENT AND EARLY MEDIEVAL ART. (3 credits).
Professor Galavaris

123-364/464A STUDIES IN LATER MEDIEVAL ART. (3 credits).
Professor Bergmann

123-365/465B STUDIES IN LATER MEDIEVAL ART. (3 credits).
Professor Bergmann

123-366/466A STUDIES IN ITALIAN RENAISSANCE ART. (3 credits).
Professor Bertos

123-367/467B STUDIES IN ITALIAN RENAISSANCE ART. (3 credits).
Professor Bertos

123-368/468A STUDIES IN NORTHERN RENAISSANCE ART. (3 credits).
Professor Bergmann

123-369/469B STUDIES IN NORTHERN RENAISSANCE ART. (3 credits).
Professor Bergmann

123-372/472A STUDIES IN 17TH AND EARLY 18TH CENTURY ART. (3 credits).
Professor Glen

123-373/473B STUDIES IN 17TH AND EARLY 18TH CENTURY ART. (3 credits).
Professor Glen

123-374/474A STUDIES IN LATER 18TH AND 19TH CENTURY ART. (3 credits).
Professor Glen

123-375/475B STUDIES IN LATER 18TH AND 19TH CENTURY ART. (3 credits).
Professor Glen

123-378/478A STUDIES IN MODERN ART AND THEORETICAL PROBLEMS. (3 credits).
Professor Judkins

123-379/479B STUDIES IN MODERN ART AND THEORETICAL PROBLEMS. (3 credits).
Professor Judkins

CANADIAN STUDIES PROGRAM

Program Committee – P.T. DAVENPORT *(Economics) (Chairman);* J.H. BRADBURY *(Geography);* M. CAYA *(University Archivist);* C.D. ELLIS *Linguistics);* Y. LAMONDE *(French Canada Studies);* A. LUCAS *(English);* P. McNALLY *(Library Science);* R. SCHULTZ *(Political Science);* A. SMITH *(Langue et littérature françaises);* M. STENBAEK -LAFON *(English);* W. WATSON *(Economics)*

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Telephone: 392-5243

The Canadian Studies Program attempts to provide students with a comprehensive, interdisciplinary view of the nature and growth of Canadian civilization. Students are also encouraged to complete a major in a discipline such as Economics, History or Political Science, etc. while completing their Canadian Studies requirements.

Students registered in this program will take fifty-four credits from the list below, at least six of which shall be from History, at least six from Literature, and at least six from a Social Science. For those students without a good working knowledge of French, study in French as a second language is particularly encouraged. Six credits may be counted toward the majors requirements.

Please consult Professor Davenport, Economics Department.

Courses

Prerequisites are required for most courses above the 200 level. Students lacking prerequisites or written permission from the course instructor may be required to drop courses.

Consult departmental listings for more complete descriptions. Not all courses are available in any given year.

ANTHROPOLOGY

151-236B	Native Peoples of North America. (3 credits).
151-317A	Prehistory of North America. (3 credits).
151-436B	Seminar on North American Native People. (3 credits).
151-547B	Early Prehistory of the New World. (3 credits).

ARCHITECTURE

301-372B	History of Architecture in Canada. (2 credits).

ART HISTORY

123-225B	Canadian Art. (3 credits).

BIOLOGY

177-358A	Canadian Flora. (3 credits).

ECONOMICS

NOTE: Economics 154-200D is prerequisite for all upper level courses in Economics except when otherwise specified.

154-200D Introduction to Economics (6 credits). By consultation with Canadian Studies Adviser only.
154-205D An Introduction to Applied Political Economy. (6 credits).
154-211D Introduction to Canadian Economic History. (6 credits).
154-304D Canadian Economic Policy. (6 credits).
154-305D Government and Business. (6 credits).
154-306D Labour Economics and Institutions. (6 credits).
154-321D The Québec Economy. (6 credits).
154-404A Transportation. (3 credits).
154-408D Public Finance. (6 credits).
154-431A Canadian Economic History. (3 credits).
154-434B Current Economic Problems. (3 credits).
154-440B Health Economics. (3 credits).
154-480A,B Research Project. (3 credits; Prerequisite: permission of instructor *and* consultation with Canadian Studies Co-ordinator).
154-505B Resource Economics. (3 credits).
154-568A Urban and Regional Economics. (3 credits).

ENGLISH

110-228A Canadian Literature I. (3 credits).
110-229B Canadian Literature II. (3 credits).
110-327D The Development of Prose Fiction in Canadian Literature. (6 credits).
110-329D 20th Century Canadian Literature. (6 credits).
110-527A Canadian Literature. (3 credits).
110-528B Canadian Literature. (3 credits).

FRENCH

125-204A Civilisation québécoise I. (3 crédits).
125-205B Civilisation québécoise II. (3 crédits).
125-315A,B Le cinéma québécois. (3 crédits).
125-328D Histoire de la civilisation québécoise. (6 crédits).
125-370A La littérature québécoise jusqu'en 1940. (3 crédits).
125-371B La littérature québécoise depuis 1940. (3 crédits).
125-372A Le roman québécois jusqu'en 1945. (3 crédits).
125-373B Le roman québécois (1945-60). (3 crédits).
125-375D Théâtre québécois. (6 crédits).
125-377A La critique littéraire québécoise. (3 crédits).
125-378A le conte québécois. (3 crédits).
125-382A Le roman québécois depuis 1960. (3 crédits).
125-383B Le roman québécois depuis 1960 II. (3 crédits).
125-470A Poésie québécoise de Crémazie à Saint-Denys-Garneau. (3 crédits).
125-471B Poésie québécoise d'Alain Grandbois à nos jours (depuis 1940). (3 crédits).
125-474B La femme dans la littérature québécoise. (3 crédits).
125-485A Essai québécois avant 1960. (3 crédits).
125-486B Essai québécois depuis 1960. (3 crédits).

FRENCH CANADA STUDIES PROGRAM

(See Centre d'Études Canadiennes-Françaises).

GEOGRAPHY

183-236A Indigenous Peoples of North America. (3 credits).
183-301A Geography of Northern Lands. (3 credits).
183-309A Canada: Its Geographic Foundations. (3 credits).
183-311B Geographic Attributes of the Canadian Economy. (3 credits).
183-313A Geography of Recreation. (3 credits).
183-318A Geography of Corporate Enterprise. (3 credits).
183-325A Physical Geography of Québec. (3 credits).
183-326B Human Geography of Québec. (3 credits).
183-333A Montreal Urban Field Studies. (3 credits).
183-402B Social and Economic Geography of Circumpolar Regions. (3 credits).
183-403B Land-use Systems in Arctic and Subarctic Canada. (3 credits).
183-483B Historical Geography. (3 credits).

HISTORY

NOTE: History 101-202A and 101-203B or equivalent are prerequisites for advanced courses in Canadian History.

101-202A Canada to 1867. (3 credits).
101-203B Canada Since 1867. (3 credits).
101-303A Québec Since 1840. (3 credits).
101-309B Canada and the British Empire. (3 credits).
101-322B Canada and the American Presence Since 1939. (3 credits).
101-342A The History of Canada's External Relations: 1867-1939. (3 credits).
101-343B Ideas and Methods in Canadian History. (3 credits).
101-352D Emergence of English Canada: 1791-1867. (6 credits).

101-362B The Canadian West 1870-1970. (3 credits).
101-363D Contemporary Canada: 1890-1970. (6 credits).
101-441A The Beginnings of Industrial Society in Canada. (3 credits).
101-442B Industry and Social Change in Canada. (3 credits).
101-472D Economy and Society in British North America. (6 credits).
101-483D The History of Montreal. (6 credits).
101-493D Topics in Canadian Social History. (6 credits).

INDUSTRIAL RELATIONS

279-294A,B Introduction to Industrial Relations. (3 credits).

LINGUISTICS

104-330A Indian Languages of North America. (3 credits).
104-410B Structure of a Specific Language. (3 credits). For 1981-82: Cree.
104-305D Self Instructional Language Module. (6 credits). Modules in *Cree* and in *Innuttitut* are available.

MUSIC

214-391A Canadian Music. (3 credits).

PHILOSOPHY

107-221B Introduction to History and Philosophy of Science Part II. (3 credits).

POLITICAL SCIENCE

160-221D Government of Canada. (6 credits).
160-318A Local Government in Comparative Perspective. (3 credits).
160-320A Canadian Political Process. (3 credits).
160-321B Issues in Canadian Public Policy. (3 credits.)
160-337A Canadian Public Administration. (3 credits).
160-342A Canadian Foreign Policy. (3 credits).
160-420B Politics and Communications. (3 credits).

RELIGIOUS STUDIES

260-420B Canadian Church History. (3 credits).

SOCIAL WORK

407-352A The Public Social Services in Canada. (3 credits).
407-457B Legal Problems of the Poor. (3 credits).

SOCIOLOGY

166-210A,B Sociological Perspectives. (3 credits).
166-223A Social Stratification. (3 credits).
166-225B Medicine and Health in Modern Society. (3 credits).
166-230A Class, Ethnicity, and Politics. (3 credits).
166-233B Canadian Society. (3 credits).
166-301B Comparative Ethnic Relations. (3 credits).
166-317B Research on Women in the Media. (3 credits).
166-323B Sociology of Education. (3 credits).
166-327A Sociology of the Jews in North America. (3 credits).
166-435B Sociology of Popular Culture. (3 credits).

CENTRE FOR EAST ASIAN STUDIES (112)

Director – M. LOCK
Associate Director – S.J. NOUMOFF

The Interdisciplinary Committee on East Asian Studies consists of faculty members in all relevant departments.

3434 McTavish Street,
Montreal, PQ H3A 1X9
Telephone: 392-4582

GENERAL INFORMATION

The Centre for East Asian Studies offers an interdisciplinary program focusing on China and Japan. The courses included in the East Asian Studies program are given in the departments of Anthropology, East Asian Languages and Literatures, Economics, Geography, History, Music, Political Science, Religious Studies and Sociology. These courses are listed below.

The program has been structured to accommodate general students who wish to acquire a basic knowledge of East Asia as well as those students who desire to specialize in the field. Requirements for the Major Program and the Honours Program currently offered are as follows:

MAJOR IN EAST ASIAN STUDIES

The requirements for a Major in East Asian Studies consist of the following: Two compulsory courses (History 101-208A and 218B, 3 credits each) plus forty-eight credits (or the equivalent) drawn from the course listings in East Asian Studies and the Department of East Asian Languages and Literatures. These forty-eight

credits must be spread among more than one department. Students are encouraged to enrol in the language sequence.

Enrolment in the East Asian Studies Major program will take place at the Centre for East Asian Studies just prior to university registration.

Inquiries regarding the Major in East Asian Studies should be addressed to Prof. S.J. Noumoff, Centre for East Asian Studies, 392-4582.

HONOURS IN EAST ASIAN STUDIES

The Honours Program in East Asian Studies will consist of a total of 60 credits. Of these 60 credits, the following 30 credits are compulsory: History 101-208A and 218B, 3 credits each, a minimum of three levels of Chinese or Japanese language study, 18 credits; and East Asian Studies 112-493D Seminar, 6 credits. In addition to these required courses, students must complete 30 additional credits selected from the East Asian Studies course listing. Modifications may be considered by the Honours adviser.

Since this is a multidisciplinary program, students will be encouraged to elect courses in more than one discipline.

Enrolment in the East Asian Studies Honours Program will take place just prior to university registration. The date and place of this enrolment will be announced.

Inquiries regarding the Honours Program in East Asian Studies should be addressed to Professor S.J. Noumoff, Centre for East Asian Studies, 392-4582.

JOINT HONOURS IN EAST ASIAN STUDIES

Joint Honours programs can be arranged after consultation with the East Asian Studies Honours Adviser and the Honours Adviser from the other department.

Course Descriptions

Consult departmental listings for more complete descriptions. Not all courses are available in any given year.

EAST ASIAN STUDIES

112-493D SEMINAR: COMPARATIVE STRATEGIES OF DEVELOPMENT IN EAST ASIA. (6 credits; Prerequisite: 101-208A and 218B or consent of instructor). Focus will be on the examination of various Asian Societies in the context of their historical experience of confrontation with the west, and their responses to that experience. Examination will be made of the socio-economic conditions which have induced both similarities as well as differences in their respective approaches to the challenge of development and modernity.

EAST ASIAN LANGUAGES AND LITERATURES

Please see page 51.

ARCHITECTURE

301-630A Minimum cost housing (6 credits).
301-632A Low impact technology in housing (3 credits).
301-631B Minimum cost housing (6 credits).
301-633B Low impact technology in housing (3 credits).

ANTHROPOLOGY

151-227A Health and Illness in Cross Cultural Perspective. (3 credits).
151-313B Social Institutions of the Early Civilizations. (3 credits).
151-330A Japanese Society and Culture. (3 credits).
151-331B Pre-History of East Asia. (3 credits).
151-431A Problems in East Asian Archaeology. (3 credits).
151-432B Continuities in Contemporary Japan. (3 credits).

ECONOMICS

154-312D Political Economy of Dependence in the Western Hemisphere. (6 credits).
154-315B Economic Development of China. (3 credits).
154-421D Comparative Economic Systems. (6 credits).

GEOGRAPHY

183-312A The Geography of China. (3 credits).

HISTORY

101-208A The Development of East Asian Civilization to 1800. (3 credits).
101-218B The Development of East Asian Civilization Since 1800. (3 credits).
101-308D History of China. (6 credits).
101-318D A History of Japan. (6 credits).
101-328A Continuity and Change in China, 1841-1911. (3 credits).
101-338B Republican China, 1911-1949. (3 credits).
101-348D Japan and the West. (6 credits).
101-417D Tradition and Change in China. (6 credits).
101-420D Forms of Protest in Traditional China. (6 credits).
101-438D Historical Themes in People's Republic of China. (6 credits).
101-458D Problems in Traditional Chinese History. (6 credits).

MANAGEMENT

278-697A Seminars in special areas of International Business.

POLITICAL SCIENCE

160-227A Political Change in the 3rd World: Independence and Nation Building. (3 credits).
160-231D Political Theory. (6 credits).
160-323B Politics and Government in East Asia. (3 credits).
160-349B Contemporary International Systems and Foreign Policy: Asia. (3 credits).

RELIGIOUS STUDIES

260-252A Hinduism and Buddhism. (3 credits).
260-253B The Religions of the Far East and Islam. (3 credits).
260-455D Buddhism. (6 credits).

SOCIOLOGY

166-332D Social Aspects of Development in the Third World. (6 credits).

CENTRE D'ÉTUDES CANADIENNES-FRANÇAISES (157)

Associate Professors – Y. LAMONDE *(Director);* D. LATOUCHE

Sessional Lecturers – A. J. BÉLANGER *(U. of M.).*

Advisory Committee – M. ECHENBERG *(Chairman; History);* M. LAFON *(English);* F. RICARD *(French);* P. DAVENPORT *(Economics);* C. LAMBERT *(Anthropology);* G. JOHNSTON *(Religious Studies);*

3475 Peel Street,
Montreal, PQ, H3A 1W7.
Telephone: 392-5200.

Le *Centre d'Études canadiennes-françaises* est un lieu de recherche et d'enseignement interdisciplinaires dont le foyer d'analyse est la société québécoise. L'étude de la société québécoise, principalement du point de vue des sciences humaines, est la raison d'être du Centre. L'étendue des recherches portant sur l'histoire et la vie politique québécoises constitue l'un des aspects les plus féconds des travaux qui s'y poursuivent. Un éventail d'activités recoupant la recherche, l'enseignement et autres ressources pour l'avancement du savoir maintient le Centre dans un rôle constant de liaison entre l'Université et le milieu québécois. Étudiants et professeurs de la communauté universitaire bénéficient d'une bibliothèque de référence de plus de trois cents instruments de recherche sur le Québec. Le Centre se préoccupe de la diffusion des recherches les plus actuelles sur le Québec auprès de centres d'études et d'universités tant au Québec qu'en Amérique du Nord dont les intérêts rejoignent les siens.

Lieu d'enseignement, le Centre complète et approfondit les cours portant sur le Québec offerts dans les départements de la Faculté des Arts. Avec l'appui des départements, le Centre offre un programme d'études interdisciplinaires avec concentration Majeure en Études canadiennes-françaises. Ce programme interdisciplinaire est conçu dans le but de fournir un enseignement aussi complet que possible sur la société québécoise à l'intérieur d'un cadre canadien et international.

LE PROGRAMME MAJEUR EN ÉTUDES CANADIENNES-FRANÇAISES

Le Programme Majeur comprend une suite agencée de cours portant sur la société québécoise dispensés au Centre et dans les départements. L'étudiant(e) inscrit(e) dans le Programme Majeur doit compléter un minimum de 54 crédits répartis dans les disciplines académiques disponibles au Centre ou, le cas échéant, dans les départements. Au moins 30 crédits devront être accumulés dans cinq des six disciplines suivantes: Économie, Géographie, Histoire, Littérature, Sociologie et Science politique, à raison de six crédits par discipline. De plus, l'étudiant(e) devra compléter son programme en s'inscrivant au cours de "tutorat" (157-472D) évalué à 6 crédits. Les 18 crédits restants peuvent être disposés au choix à l'intérieur des disciplines sous-mentionnées, avec l'approbation du Directeur ou de son remplaçant.

Il est recommandé que les étudiant(e)s qui souhaitent poursuivre des études au niveau du diplôme dans une des disciplines reconnues pour le Programme Majeur préparent une concentration dans la discipline de leur choix.

Les cours décrits en anglais sont donnés dans cette langue; pour les cours donnés en français, l'étudiant doit avoir une connaissance minimale du français écrit et comprendre le français parlé; interventions et travaux peuvent se faire en anglais.

Pour tout renseignement supplémentaire, veuillez vous adresser au Directeur ou à son remplaçant, Centre d'Études canadiennes-françaises, 3475, rue Peel (392-5200).

The *Centre d'Études canadiennes-françaises (French Canada Studies Program)* is an interdisciplinary teaching and research unit that includes Québec society as an area focus. The study of Québec society primarily from the perspective of the Social Sciences is the mainstay that has afforded the Centre a recognized standard of excellence in research in areas such as the history and the government of

Québec. Through its varied activities involving research, teaching and other public forms facilitating the extension of knowledge, the Centre maintains a vital link between the University and the Québec community. A reference library containing extensive research material on Québec is at the disposal of students and professors. Ongoing contacts with universities in Québec and throughout North America enable the Centre to share in the dissemination of research with other Area Studies Centres with similar interests.

As a teaching unit, the Centre extends and complements the work of Departments with course offerings on Québec society. With the support of Departments, the Centre offers an interdisciplinary Major in French Canada Studies, designed for a comprehensive understanding of Québec society in a Canadian and in an international context.

MAJOR PROGRAM IN FRENCH CANADA STUDIES

The Major Program consists of a detailed sequence of courses related to Québec society offered at the Centre and in the relevant Departments. A student majoring in French Canada Studies is expected to complete a minimum of 54 credits in courses distributed in disciplines available at the Centre or in the appropriate Departments. At least 30 credits are to be taken in courses in five of the six following disciplines: History, Political Science, Literature, Sociology, Geography and Economics with a minimum of 6 credits in each discipline. In addition, the student in his/her final year is required to complete the research tutorial (157-472D) worth 6 credits. The remaining 18 credits can be freely distributed within the above sequence, with the approval of the Adviser. Students who intend to pursue graduate studies in any of the disciplines that are part of the interdisciplinary Major are encouraged to concentrate on an area in the discipline that meets with their interest.

Courses described in English are given in English; for courses described and given in French, a reading knowledge and a minimal ability to understand spoken French is required; writing and speaking ability are not required.
To inquire about the program, students should contact the Director, or his delegate at the Centre d'Études canadiennes-françaises, 3475 Peel Street (392-5200).

Courses Offered by the Centre d'Études Canadiennes-Françaises

• *Denotes not offered 1982-83.*

157-200A INTRODUCTION TO QUÉBEC SOCIETY. (3 credits). This special survey course will discuss the major historical developments in the economic, social, intellectual and political life of Québec society in the XXth century. Topics covered include English-French relations, the impact of industrialization, labour legislation, the role of Church and the State, the rise and content of the separatist ideology, the evolution of revolutionary ideas, violence, the role of the media and the study of mass culture. A reading knowledge of French is suggested. (Not open to students who have taken 157-210B).

157-220A INTRODUCTION À L'HISTOIRE DE LA SOCIÉTÉ QUÉBÉCOISE. (3 crédits). Les objectifs de ce cours d'introduction sont doubles: familiariser les étudiants avec les instruments de recherche et l'historiographie québécoise, évoquer les grandes étapes du développement économique, social et politique de la société québécoise depuis la Confédération jusqu'à la Révolution tranquille.

157-226A INTRODUCTION À LA VIE POLITIQUE QUÉBÉCOISE. (3 crédits). Une introduction à la vie politique québécoise à travers l'étude des institutions, des idéologies et des comportements politiques. Une attention particulière sera accordée à la structure et aux changements dans le système politique québécois.
Professeur Bélanger

157-230B INTRODUCTION À L'HISTOIRE CULTURELLE DU QUÉBEC (19e-20e s.). (3 crédits). Analyse de la culture sur deux siècles, de la culture traditionnelle à celle des medias. Les rapports des formes et des contenus culturels à l'économie, aux groupes sociaux, à la technologie. Histoire culturelle au Canada. Familiarisation avec les problématiques et les courants d'interprétation.
Professeur Yvan Lamonde

157-300A CULTURE ET DIVERTISSEMENTS POPULAIRES AU QUÉBEC ET À MONTRÉAL (1880-1920). (3 crédits; prérequis: 157-230B ou consentement du professeur). Définition de la culture populaire, rurale et urbaine. Etude des formes de divertissements et de culture (cinéma, sport. . .) en milieu industriel et urbain. Leurs rapports à l'espace urbain, au système économique, aux classes sociales et aux pouvoirs religieux et politique.
Professeur Yvan Lamonde

157-303A LE QUÉBEC CONTEMPORAIN: ÉVOLUTION SOCIO-ÉCONOMIQUE (1867-1945). (3 crédits; prérequis: 157-220A ou 157-226A ou 101-203B ou consentement du professeur). Trois quarts de siècle de changements sociaux et économiques transforment la société québécoise en une société industrielle et urbaine. Les groupes d'intérêts, syndicats, mouvements coopératifs, associations scientifiques, corporations professionnelles, etc. sont forcés de se définir. La con-

testation politique et sociale génère des conflits nombreux. Les pouvoirs, Église, État, milieux d'affaires ajustent et consolident leur emprise sur une société en profonde mutation. Quelles sont les causes externes et internes de ces changements et quels en furent les effets matériels et culturels?

- **157-304B CULTURE ÉCONOMIQUE ET CULTURE POLITIQUE AU QUÉBEC ET AU CANADA.** (3 crédits). Les Canadiens-français ont ils une attitude particulière face à l'activité économique? Comparaison avec les États-Unis et le Canada anglais, la notion de compétition, le paradigme de Pareto dans les comportements économiques et politiques au Canada français. L'importance du coopératisme. Relations entre les conceptions de l'activité politique et de l'activité économique chez les deux communautés canadiennes. Relations entre progrès technologiques et développement économique. Impact des politiques fédérales et intervention du gouvernement québécois dans le développement économique 1867-1975.

157-310B CULTURE URBAINE ET MEDIAS AU QUÉBEC (1920-1960). (3 crédits; prérequis: 157-230B ou permission du professeur). Étude de la culture populaire urbaine et de la culture de masse au moment de l'entrée du Québec dans l'ère des medias (cinéma, radio, TV) et de la mobilité (automobile, tourisme). Les caractères traditionnels et innovateurs de cette culture, son américanité.
Professeur Yvan Lamonde

157-313B LE QUÉBEC CONTEMPORAIN: ÉVOLUTION SOCIO-ÉCONOMIQUE (1945-1960). (3 crédits; prérequis: 157-220A ou 157-226A ou 101-203B ou consentement du professeur). Urbaine et industrielle, la société québécoise fait face à des problèmes économiques et sociaux aggravés par la crise et la guerre. Les élites cléricales et politiques, intellectuelles et nationalistes sont divisées quant à l'orientation à donner à la société québécoise. Dans les groupes sociaux et économiques, à l'université, au sein de la fonction publique, dans les medias, à l'intérieur de l'Église, des projets de changement sont exprimés. Deux discours culturels s'affrontent, garder l'héritage/moderniser la société. De tout ce débat naît la Révolution tranquille.

- **157-316B LE QUÉBEC ET L'AMÉRIQUE DU NORD.** (3 crédits; prérequis: 157-336A ou 157-370A ou consentement du professeur). Ce cours tentera de répondre à la question suivante: dans quelle mesure et de quelle façon le Québec est-il, malgré sa spécificité culturelle, une société nord-américaine? Les grands traits des sociétés nord-américaines. L'influence du modèle américain. Les courants d'échange. Comparaison des modèles de développement. Analyse de la thèse de L. Hartz.

- **157-323B HISTOIRE CONSTITUTIONNELLE DU QUÉBEC ET DU CANADA 1867-1976.** (3 crédits; prérequis: 157-226A ou 101-203B ou consentement du professeur). Analyse de la constitution du Canada, de ses fondements et des diverses interprétations qu'on en a données. Analyse de l'évolution du fédéralisme canadien, période des rapports entre le gouvernement fédéral et les gouvernements provinciaux.

- **157-336A LE QUÉBEC ET LE CANADA.** (3 crédits). Comment les Canadiens anglais et les Québécois se perçoivent-ils? Les différences culturelles entre les deux groupes. Les relations politiques et économiques entre les deux groupes. L'impact de la Révolution tranquille. La place des francophones et des anglophones dans la vie collective. Les projets de réaménagement du cadre politique.
Professeur Latouche

- **157-355B LES IDÉES POLITIQUES AU QUÉBEC AVANT 1960.** (3 crédits; prérequis: 157-226A ou 157-370A ou consentement du professeur). Un survol des principales idées politiques mises de l'avant au Québec depuis 1960: la montée du sentiment démocratique, l'apparition du nationalisme, cléricalisme. La contestation idéologique: apparition des idées laïques, le socialisme, l'indépendantisme.

- **157-356B LES IDÉES POLITIQUES AU QUÉBEC AVANT 1960.** (3 crédits; prérequis: 157-226A ou 157-370A ou consentement du professeur). Un survol des principales idées politiques mises de l'avant au Québec depuis 1960: libéralisme, conservatisme, fédéralisme, socialisme, laïcisme, indépendantisme.

157-366A THE MINORITIES IN QUÉBEC. (3 credits). After an historical survey, the course will focus on the general relationship between the various minority groups and the larger francophone community. Topics include: historical background; ethnic distribution; socio-economic composition; political involvement; process of adaptation; language rights, schooling system; social conflict; analysis of bi-lateral perceptions. (Not open to students who have taken 157-367B). Given in English.

157-370A RÉVOLUTION TRANQUILLE ET CHANGEMENTS POLITIQUES AU QUÉBEC DEPUIS 1960. (3 crédits; ce cours est prérequis pour les autres cours sur la politique québécoise; a reading knowledge and a minimal ability to understand spoken French are required; writings and speaking ability are not required). Les origines, les causes, les instigateurs de la révolution tranquille; ses antécédents; ses principales manifestations sociales, économiques, culturelles et leur impact politique. L'évolution des mentalités. L'apparition des mouvements indépendantistes. Les nouvelles forces sociales.

La contestation du régime fédéral. Changements au Québec depuis 1960.
Professeur Latouche

- **157-371D LIVRES ET SOCIÉTÉ QUÉBÉCOISE.** (6 crédits). Travaux pratiques: problèmes actuels de la société canadienne-française. Ce séminaire de recherche est consacré à l'analyse des divers phénomènes socio-culturels et idéologiques qui se rapportent à l'histoire de l'édition, de l'importation et de la distribution du livre au Québec et au Canada entre 1820 et 1960. L'analyse sectorielle et quantitative sera privilégiée. Travaux pratiques orientés vers la constitution d'un dossier cumulatif.

- **157-406B CULTURE, CONTRE-CULTURE ET CONTESTATION POLITIQUE AU QUÉBEC.** (3 crédits; prérequis: 157-226A ou 157-370A ou consentement du professeur). Les origines et l'évolution récente de la culture traditionnelle au Québec. L'apparition de la contre-culture, ses protagonistes, son contenu. Les nouvelles formes d'organisation au Québec: comités de citoyens, communautés autogérées, coopératives. Les innovations sociales et leur impact politique dans les secteurs du travail, de la consommation, de l'habitation.

157-416B INFLUENCES INTERNATIONALES SUR LE DÉVELOPPEMENT DU QUÉBEC CONTEMPORAIN DEPUIS 1929. (3 crédits; Prérequis: 157-303A ou 157-313B ou 157-370A ou consentement du professeur). La société québécoise s'est développée aux confluents d'influences internationales spécifiques: système politique et légal britannique, doctrines et interventions romaines, culture et capital américains, produits culturels français. Ce cours cherche à identifier les principaux éléments de ces influences internationales sur le développement de la société québécoise, auxquels s'ajoutent, après 1929, des événements mondiaux d'une grande importance: la crise économique, la seconde guerre mondiale, la guerre froide, la décolonisation.

- **157-426B PARTIS POLITIQUES ET COMPORTEMENTS ÉLECTORAUX AU QUÉBEC.** (3 crédits; prérequis: 157-226A ou 157-370A ou consentement du professeur). Les principaux partis politiques au Québec: leur organisation, leurs idéologies, leur clientèle. Le comportement électoral des Québécois. Le cas du référendum de 1980. Les principales explications offertes.

157-446B PRISE DE DÉCISION ET POUVOIR POLITIQUE AU QUÉBEC. (3 crédits; prérequis: 157-226A ou 157-370A ou consentement du professeur). Les principaux acteurs de la décision politique au Québec. Le rôle du premier ministre, du Conseil des ministres, des conseillers. Les mécanismes formels et informels de la prise de décision. Les grands rouages de l'administration publique: technocratie, bureaucratie et règlementation. A reading knowledge and a minimal ability to understand spoken French are required; writing and speaking ability are not required.
Professeur Latouche

- **157-456B L'ÉTAT-PROVIDENCE ET L'ANALYSE DES POLITIQUES SOCIALES AU QUÉBEC.** (3 crédits; prérequis 157-226A, 157-370A ou consentement du professeur; a reading knowledge and a minimal ability to understand spoken French are required; writing and speaking ability are not required). Comment peut-on parler de politiques sociales dans le cas du Québec? Quels sont les principaux modèles utilisés pour les analyses? Le développement de l'État-Providence québécois. Les principaux programmes qui le définissent. Les forces et les conflits qui animent ces politiques. La social-démocratie a-t-elle un avenir? Une attention particulière sera apportée au décodage idéologique des politiques sociales québécoises et de leurs critiques.

157-466B DÉVELOPPEMENT DE LA VILLE DE MONTRÉAL DEPUIS LA DEUXIÈME GUERRE MONDIALE. (3 crédits). Métropole du Canada, lieu d'habitation de la majorité des Québécois, carrefour des groupes ethniques, Montréal a connu depuis trente ans un développement finalement peu étudié. Le cours portera sur l'évolution de la communauté urbaine, le pouvoir politique, le développement économique, les problèmes sociaux: transport en commun, rénovation urbaine, logement, le développement ou le sous-développement des quartiers et "villages".

- **157-470A LA CULTURE CONTEMPORAINE AU QUÉBEC ET AU CANADA.** (3 crédits). Étude, à l'aide des enquêtes récentes, de la consommation des medias, de loisirs et de culture. L'évolution et la signification des politiques gouvernementales dans ces secteurs. Les formes culturelles non dominantes. La prospective culturelle. Essai de compréhension historique de la culture de masse.
Professeur Yvan Lamonde

157-472D TUTORIAL. (6 crédits). Sous la direction du Directeur du Centre d'Études canadiennes-françaises ou d'un professeur, chaque étudiant en concentration canadienne-française devra choisir un sujet auquel il travaillera pendant une année. Sa recherche terminée, l'étudiant rédigera un essai qu'il présentera à ses collègues et à un panel de spécialistes qui en discuteront.
Le Directeur

COURSES RELEVANT TO THE MAJOR OFFERED BY DEPARTMENTS

(N.B. The following list is not exclusive; it aims only at presenting a sample of courses relevant to the Major available in Departments.

Please consult departmental listings for fuller information. Not all courses are available in any given year.

ECONOMICS

154-211D Introduction to Canadian Economic History. (6 credits).
154-304D Canadian Economic Policy. (6 credits).
154-321D The Québec Economy. (6 credits).
154-431B Seminar in Canadian Economic History. (3 credits).

FRENCH LANGUAGE AND LITERATURE

125-208A Littérature québécoise contemporaine I. (3 crédits).
125-209B Littérature québécoise contemporaine II. (3 crédits).
125-315A Le cinéma québécois. (3 crédits).
125-370A Littérature québécoise jusqu'en 1940. (3 crédits).
125-371B Littérature québécoise depuis 1940. (3 crédits).
125-372A Le roman québécois jusqu'en 1945. (3 crédits).
125-373B Le roman québécois (1945-1960). (3 crédits).
125-375D Théâtre québécois. (6 crédits).
125-377A La critique littéraire québécoise. (3 crédits).
125-378A Le conte québécois. (3 crédits).
125-382A Le roman québécois depuis 1960. I (3 crédits).
125-383B Le roman québécois depuis 1960. II (3 crédits).
125-470A Poésie québécoise de Crémazie à Saint-Denys-Garneau. (3 crédits).
125-471B Poésie québécoise d'Alain Grandbois à nos jours. (3 crédits).
125-479B La littérature féminine. (3 crédits).
125-485A Essais québécois avant 1960. (3 crédits).
125-486B Essais québécois depuis 1960. (3 crédits).

GEOGRAPHY

183-325A Physical Geography of Québec. (3 credits).
183-326B Human Geography of Québec. (3 credits).
183-333A Montreal Urban Field Studies. (3 credits).

HISTORY

101-202A Canada to 1867. (3 credits).
101-203B Canada Since 1867. (3 credits).
101-301B People's History of Canada and Québec.
101-302B Canadian Business History. (3 credits).
101-303A Industrializing Québec, 1840-1914. (3 credits).
101-333A Social and Economic History of New France. (3 credits).

POLITICAL SCIENCE

160-221D Government of Canada. (6 credits).
160-320A The Canadian Political Process. (3 credits).
160-321B Issues in Canadian Public Policy. (3 credits).
160-421B Canadian Politics and Government. (3 credits).

SOCIOLOGY

166-217A Canadian Mass Communications. (3 crédits).
166-225B Medicine and Health in Modern Society. (3 credits).
166-230A Class, Ethnicity and Politics. (3 credits).
166-233B Canadian Society. (3 credits).
166-301B Comparative Ethnic Relations. (3 credits).
166-307A Social and Political Movements. (3 credits).
166-318A Television in Society. (3 credits).

CLASSICS (114)

Professors – P.F. McCULLAGH *(Hiram Mills Professor of Classical Philology);* A. SCHACHTER *(on leave)*
Associate Professors – A. FARMAKIDES; J.M. FOSSFY; M.J. SILVERTHORNE *(Chairman);* G.L. SNIDER; P. VALERI-TOMASZUK; P. VIVANTE; G.M. WOLOCH
Assistant Professor – T.W. RICHARDSON

Room 517, Stephen Leacock Building, 855 Sherbrooke St. West, Montreal, PQ, H3A 2T7. Telephone 392-5227

Classics for the Specialist

The Department's honours programs are designed to train students who wish to pursue careers in Classics, Ancient History and Archaeology, Major programs give rather less intensive training and provide a useful background for students interested in the liberal arts or the social sciences.

Classics for the Non-Classicist

The Department offers numerous courses – many of which do not require a knowledge of Ancient Greek or Latin – designed for students in other programs such as Anthropology, Art History, English, Linguistics, Modern Languages, Philosophy, Political Science, Religious Studies.

Students of languages, literature and history may,in addition, be interested in the introductory language courses offered by this Department,

which enjoys an international reputation as a pioneer in this field.

The very nature of the subject itself – covering as it does not only the language and literature, but also the history, archaeology, art, religion, philosophy, politics and economics of an entire civilization – can provide the student with a satisfying and relevant background to a wide range of studies.

NOTE: The following outlines represent Departmental requirement only. The attention of students is directed to the regulations of *Faculty* concerning *Programs.* Each student's program must also satisfy the regulations imposed by the Faculty of Arts.

MAJOR PROGRAMS

NOTE: Major programs in Classics differ from Honours programs in the degree of specialization required. They permit students pursuing the B.A. degree to devote about a third of their time to related disciplines or to other elective areas of interest. All 200 level courses in Classics, both language and non-language courses, are designed as basic introductory courses to the subject. Students majoring in Classics will normally elect these courses in their first year of study. In their second and third year of study students are expected to concentrate their efforts at the 300 and 400 level courses.

Major in Classics (Classical Culture and Society)

(See the Chairman, L517, 392-5227)

The student will select 27 credits from each of the two groups of courses listed below, choosing a maximum of 12 credits at the 200-level from each group. The course 114-484 is required for all students in this program, and may be taken as part of either the first or second group.

Group 1. "Ancient Culture": e.g. Classics 200A, 202B, 203A/B, 204B, 207A, 208B, 241B, 300B, 305D, 307A, 340B, 400B, 405A, 406B, 484B.

Group 2. "Ancient Society": e.g. Classics 201A, 205D, 301D, 302A, 303D, 304A, 306B, 308B, 345A, 401A, 407A or 309A, 470D, 475A, 476B, 484B.

NOTES:

1. Students who wish to substitute for Non-Language courses a continuation sequence of language courses offered in the Department may do so.
2. Students who intend to pursue graduate studies in Classics should include a language component in their program.
3. Students may on occasion substitute for a course offered in the Department of Classics a course offered by another Department, subject to the approval of the Department of Classics.

Major in Classics (Ancient Greek)

(See the Chairman, L517, 392-5227)

24 Credits in Ancient Greek Literature, including Classics 321A and 6 credits in Homeric Greek.
30 Credits in related courses chosen with the approval of the Department of Classics.

(Note: The latter may include a concentration of up to 12 credits in a second discipline chosen for its relevance to the student's work in Classics).

TOTAL: 54 Credits

Major in Classics (Latin)

(See the Chairman, L517, 392-5227)

24 Credits in Latin Literature, including Classics 311A or 312A and 313A or 314A.
30 Credits in related courses chosen with the approval of the Department of Classics.

(Note: The latter may include a concentration of up to 12 credits in a second discipline chosen for its relevance to the student's work in Classics).

TOTAL: 54 Credits

Major in Classics (ancient Greek and Latin)

(See the Chairman, L517, 392-5227)

Minimum Course Requirements

12 Credits in Intermediate Ancient Greek Literature, including Classics 114-321A and 6 credits in Homeric Greek.
6 Credits in Senior Ancient Greek Literature.
12 Credits in Intermediate Latin Literature, including Classics 114-311A or 312A and 313A or 314A.
6 Credits in Senior Latin Literature.
18 Credits in Non-Language Courses approved by the Department of Classics.

Major in Classics (Classical Historical and Archaeology)

(See Professor J.M. Fossey, L529, 392-5226)

Minimum Course Requirements

24 Credits in Archaeology Courses offered by the Department of Classics (i.e. Classics 114-205D and 305D and 470D, and 475A, and 476B.
18 Credits in Ancient History i.e. Classics 114-201A and 241B and 301D and 303D).
6 Credits in other courses given in the Department of Classics.

6 Credits in a course or courses chosen with the approval of the Department of Classics.

NOTE: *This program does NOT lead to postgraduate work in Classics,* Although it could qualify a student for research in various aspects of Roman and European Archaeology.

Major in Classics (Modern Greek)

(See Professor A. Farmakides, L516, 392-5222)

24-30 Credits in Modern Greek Language and Literature.
30 Credits in related courses chosen with the approval of the Department of Classics. (Note: These latter may include up to 12 credits in a second language, ancient or modern.).

TOTAL: 54 Credits

Major in Classics (Ancient and Modern Greek)

(See Professor A. Farmakides, L516, 392-5222)

Minimum Course Requirements

Classics 220D or 221A.
Classics 235A, 236A, 335A (which must be taken unless the student can prove proficiency in Modern Greek).
12 Credits in Intermediate Ancient Greek Literature.
6 Credits in Senior Ancient Greek Literature.
18 Credits in Modern Greek Literature.
18 Credits in Non-Language Courses approved by the Department of Classics.

Interdisciplinary Major Programs

The Department of Classics participates in the following interdisciplinary Major Programs

CLASSICS AND LINGUISTICS

1. *Classics (27 credits)*

The student will select a continuation sequence in one of the languages offered by the Department of Classics. It is recommended that in addition the student do some work in a second language offered by the Department.

2. *Linguistics (27 credits)*

104-200A,B/104-201A,B INTRODUCTION TO THE STUDY OF LANGUAGE.

104-400A THEORY AND METHODS OF HISTORICAL LINGUISTICS.

104-401B SEMINAR IN HISTORICAL LINGUISTICS.

PLUS 15 Credits in other Linguistic Courses selected with due regard to prerequisites.

HUMANISTIC STUDIES

The language component may include Latin, Ancient Greek, or Modern Greek.

MODERN LANGUAGES

One of the modern languages may be Modern Greek.

HONOURS PROGRAMS

Honours in Classics

(See the Chairman, L517, 392-5227)

Minimum Course Requirements

24 Credits in Ancient Greek Literature, including Classics 114-321A and 6 credits in Homeric Greek.
24 Credits in Latin Literature, including Classics 114-311A or 312A and 313A or 314A.
24 Credits in Ancient Greek and Latin Language Courses at the 200 level, plus Non-Language Courses.
COMPREHENSIVE Honours Tutorial.

NOTES:

1 The Non-Language Courses maybe chosen from among courses given within the Department, or courses offered by other Departments, chosen with the permission of the Department of Classics.
2 **Comprehensive Honours Tutorial.** Every Honours student will be assigned to a Tutor upon entry into the Honours Program. The Tutor will meet with the student regularly during Term, and will assign essays or other work on subjects related to the course work on which the student is engaged. The Tutor may also, where practicable, assign summer reading. it will also be the Tutor's function to assist the student in selecting a suitable sequence of courses. Satisfactory completion of the work involved will be a requirement for the Honours degree, and successful candidates will be provided with a testimonial letter stating that they have fulfilled this requirement.

Honours in Classics (Classical History and Archaeology)

(See Professor J.M. Fossey, L529, 392-5226)

24 Credits in Ancient Greek or Latin
12-18 Credits in the language not chosen above.
36-42 Credits in Archaeology and Ancient History courses offered by the Department of Classics
6-18 Credits in other courses. Comprehensive Honours Tutorial

TOTAL: 90 Credits

NOTES:
1. For the Comprehensive Honours Tutorial, please see "Honours in Classics", Note 2.
2. Students proposing to obtain an M.A. in Classics at McGill are advised to gain 18 credits in the second Classical language, and to consult the Department for the precise requirements for the M.A. in Classics.
3. Classics 114-200Aand 202B may NOT be included in the student's required courses for this program.

Honours in Classics (Classical and Hellenic Studies)

(See Professor A. Farmakides, L516, 392-5222)

Minimum Course Requirements

Classics 114-220D or 221A.
Classics 114-235A, 236A, 335A.
Classics 114-213A.
18 Credits in Ancient Greek Literature.
18 Credits in Modern Greek Literature.
18 Credits in Latin Literature.
18 Credits in Non-Language Courses.

NOTES:
1. Classics 235A, 236A, 335A must be taken unless the candidate has reached a standard sufficient to satisfy the Department that he/she is proficient in Modern Greek.
2. The Non-Language Courses may be chosen from among courses given within the Department, or courses offered by other Departments, chosen with the permission of the Department of Classics.

JOINT HONOURS PROGRAMS

In recent years Joint Honours Programs have been approved involving Classics and a number of related disciplines, including English, French, German, Linguistics, and Spanish. All Joint Honours Programs must have the approval of both Departments concerned. For Classics, see the Chairman,L517, 392-5227.

Formal requirements are set forth for the following programs:

Joint Honours in Classics and History

(See the Chairman, L517, 392-5227)

1. Students must complete 36 credits in each Department for a total of 72 credits. The remaining 18 credits of electives may be chosen from among the offerings of other Departments at McGill but these electives should be chosen in consultation with the Honours advisers in the Departments of History and Classics.
2. Students will have the option of 6 credits in history courses offered by the Classics Department as part of the History requirement.

Joint Honours in Anthropology and Classical Archaeology

(See Professor J.M. Fossey, L529, 392-5226)

The Departments of Anthropology and Classics offer the following program leading to a Joint Honours B.A. degree:

1. Students must complete 33 credits in Anthropology and 39 credits in Classics, for a total of 72 credits. The remaining 18 credits may be chosen from among offerings of other Departments at McGill, but these electives should be chosen after consultation with advisers in the Anthropology and Classics Departments.

This program does NOT lead to post-graduate work in pure Classics, but it may qualify the student for Post-graduate work in Archaeology and Prehistory.

2. *Anthropology Requirements:*

9 Credits consisting of 3 of the following five "core courses": Anthropology 151-354A, 355B, 356B, 357A, Linguistics 104-230A.
3 Credits Anthropology 151-358B.
6 Credits consisting of 2 advanced level courses (i.e. with a 400 listing).
12 Credits consisting of any other 4 Anthropology courses.
3 Credits consisting of an independent research course (462A or 463B) in the U3 year. The project will be based upon the student's interdisciplinary training in Anthropology and Classical Archaeology. The project will last for the entire year, with registration for one half course in Anthropology and one half course in Classics.

TOTAL: 33 credits.

3. *Classics Requirements:*

18–24 Credits in Archaeology courses.
6—12 Credits in Ancient Greek OR Latin.
6 Credits in Ancient History
3 Credits Classics 114-482B (Independent Research).

TOTAL: 39 credits.

NOTE: Classics 114-200A and 202B may NOT be included in the student's required Classics courses for this program.

TABLE OF CLASSICS DEPARTMENT COURSES

Course Descriptions

NON-LANGUAGE COURSES

- *Denotes not offered in 1982-83.*

114-200A GREEK CIVILIZATION (FROM ITS BEGINNINGS TO THE PERSIAN WARS). (3 credits). A survey of Greek civilization (through lectures and self-study modules) from its beginnings in the Bronze Age down through the Persian Wars, including art and architecture, literature (Homer and Hesiod), philosophy and religion, archaeology and history (Herodotus). Classics 114-200A and 114-202B, which completes the survey, are companion courses, but students may elect either course, or both. Original sources will be read in translation.
Professor Snider

114-201A ANCIENT GREEK HISTORY. (3 credits). A survey of Ancient Greek History from the origins to the Roman Conquest. The Roman continuation of this course is 114-241B. (Not open to students who have completed 114-201D in previous years).
Professor Richardson

- **114-202B GREEK CIVILIZATION (FIFTH CENTURYB.C. AND LATER).** (3 credits). A survey of Greek civilization of the fifth century B.C., including art and architecture, drama, philosophy and religion, archaeology and history (Thucydides). The continuation of Greek civilization (Hellenistic and Byzantine) will be studied in modular form. Classics 114-200A and 114-202B, which completes the survey, are companion courses, but students may elect either one course, or both. Original sources will be read in translation.
Professor Snider

114-203A/B INTRODUCTION TO GREEK MYTHOLOGY. (3 credits). A survey of the myths and legends of Ancient Greece.
Professors Silverthorne and Snider

- **114-204B INTRODUCTION TO ANCIENT GREEK RELIGION.** (3 credits). A study of the religious practices of the Ancient Greeks.

114-205D INTRODUCTION TO CLASSICAL ARCHAEOLOGY: METHODS AND TECHNIQUES. (6 credits). Concerned essentially with the application of modern techniques to Classical Archaeology, and its connections with contemporary Europe.
Professor Fossey

- **114-207A CLASSICS IN TRANSLATION.** (3 credits). Each student will select a single author or a field in which to specialize within the framework of a general discussion of Greek Literature from Homer to Aristotle.

114-208B ROMAN LITERATURE AND SOCIETY. (3 credits). Life and Society in the Roman Empire as reflected in contemporary authors of varying genres (epic, history, philosophy, satire and the novel).

114-241B ANCIENT HISTORY (ROMAN(. (3 credits). A survey of Roman history. (Not open to students who have completed 114-201D).
Professor Richardson

114-300B GREEK DRAMA AND THE THEATRE. (3 credits). A study of the Greek dramatists, both tragic and comic, in the light of their plays, with special emphasis on the theatrical techniques of the authors and the means of production in the Greek theatre.
Professor Vivante

- **114-301D SEMINAR IN ANCIENT GREEK HISTORY.** (6 credits). A seminar on problems in Ancient Greek History (social, political, and economic) from the beginnings to the time of Alexander.

114-302A WOMEN IN GREEK DRAMA. (3 credits). Each of four Greek tragedies (e.g. Oedipus, Antigone, Bacchae, Medea) analyzed along with its modern interpretations. An attempt will be made to relate the heroines of fiction to real Greek women by comparing myth transformation in tragedy with documentary material.
Professor Valeri-Tomaszuk

114-303D SEMINAR IN ROMAN HISTORY. (6 credits). The political and social development of the Roman state from its origins to the time of Augustus, with particular attention to the collapse of the Republic and the founding of the Principate.
Professor Woloch

114-304B GREEK POLITICAL IDEAS. (3 credits). The relations of politics, law and moral values in Greek political writings. Readings in translation from the dramatists and historians, Plato and Aristotle, and the fragments of the pre-Socratics, Epicurus and the early Stoics.
Professor Silverthorne

114-305D GREEK AND ROMAN ARCHAEOLOGY. (6 credits). The archaeology of the Greek and Italian peninsulas and related areas from Neolithic times down to the Hellenistic-Roman period.
Profesor Fossey

- **114-306B THE ROMAN CITY IN CIVILIZATION.** (3 credits). Discussion of the geography, urban planning, buildings and social conditions of European cities in the Roman Empire. Why have some of them survived until today and others not?

- **114-307A INTRODUCTION TO ROMAN COMEDY.** (3 credits). An analysis of selected plays of Plautus and Terence based on the theories of Bergson and Freud; their influence on later comedy.

114-308A THE BARBARIAN KINGDOMS AND THE LATER ROMAN EMPIRE. (3 credits). An historical survey of the Romanized barbarians, the Vandals, Goths and Franks, and their political links to the Roman Empire down to A.D. 568. Sources (Cassiodorus, Gregory of Tours) will be read in translation.
Professor Woloch

- **114-309B THE GREEK AND ROMAN NOVEL (IN TRANSLATION(.** (3 credits). A study of the ancient novel, including Petronius, *The Satyricon,* Apuleius, *The Golden Ass* and Longus, *Daphnis and Chloe.*

- **114-340B PROBLEMS IN GREEK MYTHOLOGY.** (3 credits). A research-orientated course in which students work on projects dealing with specific mythological themes, either as developed in antiquity, or as they have been used in literature, art and music after the end of antiquity. NOTE: Students who have not taken Classics 114-203A/B are asked to consult the instructor in advance of registration.

114-400A THE IDEA OF EPIC. (3 credits). This course will be a criticism of the idea of epic. It will, therefore, attempt to elucidate the relation between subject-matter and poetic form, over and above the theory of literary genres. Greek Literature will provide the main reference point, but the treatment will be conceptual rather than historical, dealing with the way in which the raw materials of myth or history are rendered into poetry.

- **114-401A HELLENISTIC HISTORY.** (3 credits). A study of the political, social, and economic history of the Greek world from the time of Alexander to the Roman Conquest.

114-403A MODERN GREEK HISTORY FROM 1204 to 1821. (3 credits). The problem of the beginnings of Modern Greece and of its relation to the ancient and mediaeval Greek worlds. The Greek world after 1204: its gradual transformation after the Frankish rule and during the Turkish domination; and the historical foundations of modern Greek society in the period 1453-1669. The neo-Hellenic "Renaissance" of the 18th century and the progressive development of the national idea.
Staff

114-404B MODERN GREEK HISTORY: FROM 1821 to 1945. (3 credits). The Greek war of independence and the Great Powers, 1821-1827; Greek independence and Capodistrias. The years of absolute monarchy and of constitutional monarchy. Political evolution and the national question. Economic development from circa 1875 to the 'victory of the bourgeoisie' (1909). The Balkan Wars and the development of a modern state after World War I.
Staff

114-405A GREEK AND ROMAN LITERARY CRITICISM. (3 credits; *Prerequisite:* permission of the instructor). The aesthetic problem in Plato, Aristotle, Philodemus and Horace.
Professor Valeri-Tomaszuk

- **114-406B ROMAN COMEDY AND HUMOUR.** (3 credits; *Prerequisite:* permission of the instructor). The Amphitruo theme and its transformation.

- **114-407A LATER GREEK PHILOSOPHY.** (3 credits). Post-Aristotelian Greek Philosophy.

- **114-409A INTRODUCTION TO GREEK AND ROMAN NUMISMATICS.** (3 credits). Use will be made of the McGill coin collection.

114-440-449 SENIOR CLASSICS SEMINARS.

Courses numbered 114-440-449 fall into the category of Senior Classics Seminars. The courses offered and their subjects vary from year to year.

- **114-442B STYLE AND COMPOSITION.** (3 credits; *Prerequisite:* 12 credits each in Ancient Greek and Latin). Greek and Latin prose composition. Studies in the style of the major prose authors.

144-443A SEMINAR IN ARCHAEOLOGY. (3 credits).
Professor Fossey

114-444B SEMINAR IN ARCHAEOLOGY. (3 credits).
Professor Fossey

- **114-448B THE ROMAN NOVEL AND SATIRE.** (3 credits). Selections from Seneca, Petronius, Juvenal and Martial to be read in translation.

- **114-449B CLASSICAL THEORIES OF NATURAL LAW.** (3 credits; *Prerequisite:* Permission of the instructor). The course will cover the origin, development and criticism of theories of natural law in the Greek and Roman thinkers. Attention will be paid to the influence of these theorists on conceptions of natural law in the modern world. Original sources to be read in translation.

114-470D REGIONAL STUDIES IN CLASSICAL ARCHAEOLOGY. (6 credits; *Prerequisite:* Classics 114-205D and 114-305D or permission of the instructor).

- **114-471D ROMAN IMPERIAL HISTORY.** (6 credits; *Prerequisite:* a knowledge of Ancient Greek and Latin). Based on a study of the original sources in Greek and Latin.

- **114-472D GREECE UNDER THE ROMAN EMPIRE.** (6 credits; *Prerequisite:* a knowledge of Ancient Greek). Based on a study of the original sources in Greek.

- **114-474B GREEK RELIGIOUS PRACTICES.** (3 credits).

- **114-475A ROMAN BRITAIN.** (3 credits; *Prerequisite:* Classics 114-205D and 114-305D or permission of the instructor). The archaeology and history of Britain as a province of the Roman Em-

pire, including the Iron Age background and the decay of Roman culture in the island during the fifth century A.D. Particular attention will be given to the evidence of inscriptions.

- **114-476B HOMERIC ARCHAEOLOGY.** (3 credits). The relation of the Greek oral traditions to the results of archaeological investigation. This course is aimed both at classicists who want to see another dimension to Homer, and at archaeologists with an interest in societies having an oral tradition. Material will be so organized that the course can be taken with profit both by those who know Greek and by those who do not.

COMPREHENSIVE COURSES

114-482B INDEPENDENT RESEARCH COURSE FOR STUDENTS IN JOINT HONOURS IN ANTHROPOLOGY AND CLASSICAL ARCHAEOLOGY. (3 credits).
Professor Fossey

114-484B CLASSICAL IDEAS. (3 credits). A comprehensive course required for all students in the program "Major in Classics (Culture and Society)." Other students may take this course by permission of the Department. (Not open to students who have taken 114-402B.)
Professor Vivante and Silverthorne

LANGUAGE COURSES

114-211A LATIN LANGUAGE LEVEL ONE: INTRODUCTORY LATIN. (3 credits). A course for beginners. (The normal continuation of this course is 114-212B).
Professor Valeri-Tomaszuk

114-212B LATIN LANGUAGE LEVEL TWO. (3 credits; *Prerequisite:* Latin Language Level One or its equivalent). Review and reading for students who have had some Latin but who have not recently completed a High School Latin program, or for those who have successfully completed Latin Language Level One (114-211A).
Professor Valeri-Tomaszuk

NOTE: *Students entering 200 level Latin courses (except 114-211A) will be required to sit a placement test during the first week of term to allow staff to determine their degree of prior preparation.*

- **114-213A LATIN LANGUAGE LEVEL THREE.** (3 credits; Prerequisite: Latin Language level two or its equivalent). Reading and Advanced Grammar.

114-220D INTRODUCTORY ANCIENT GREEK. (9 credits). For students who have not matriculated in Ancient Greek. NOTE: This class meets four times per week.
Professor Ellis

- **114-221A ANCIENT GREEK FOR SPEAKERS OF MODERN GREEK.** (3 credits).

114-235A MODERN GREEK GRAMMAR I: READING AND WRITING: ELEMENTARY TO INTERMEDIATE. (3 credits; *Co-requisite: 114-236A* or permission of the instructor). A course for all beginners in Modern Greek.
Professor Farmakides

114-236A MODERN GREEK SPOKEN I. UNDERSTANDING AND SPEAKING, ELEMENTARY. (3 credits; *Prerequisite:* A course for non-Greek beginners in 114-235A; *Co-requisite:* 114-235A or permission of the instructor).
Staff

114-237A MODERN GREEK GRAMMAR II. (3 credits). *Prerequisite:* 114-235A and 236A or permission of the instructor: *Co-requisite:* 114-238B or permission of the instructor). Intermediate grammar, etymology and translation. An introduction to the synchronic study of the language. (Not open to students who have taken 114-335D).
Staff

114-238B MODERN GREEK SPOKEN II. (3 credits; *Prerequisite:* 114-235A and 236A or permission of the instructor: *Co-requisite:* 114-237B or permission of the instructor). This course is designed, particularly, but not exclusively, for *non-Greek-speaking* students who have successfully completed 114-235A and 114-236A and/or are concurrently attending 114-237B. It is intended to bring students to a level of competence in the use of the language, to enable them to proceed to the courses in literature.
Staff

LITERATURE COURSES: LATIN

114-310A INTERMEDIATE LATIN: PROSE. (3 credits; *Prerequisites:* Classics 114-212B or permission of the Department.) Selections from Latin authors, and grammatical review.
Professor Richardson

- **114-311B INTERMEDIATE LATIN: POETRY.** (3 credits; *Prerequisite:* as for 114-310B). Readings in Vergil: *Aeneid.*

114-312A INTERMEDIATE LATIN: POETRY. (3 credits; *Prerequisite:* as for 114-310B). Readings in Roman poetry.
Professor Valeri-Tomaszuk

- **114-313A INTERMEDIATE LATIN: PROSE.** (3 credits; *Prerequisite:* as for 114-310B).
- **114-314B INTERMEDIATE LATIN PROSE.** (3 credits; *Prerequisite:* as for 114-310B).

114-315B INTERMEDIATE LATIN: POETRY. (3 credits; *Prerequisite:* as for 114-310B). Readings from Ovid.
Professor McCullagh

- **114-316B INTERMEDIATE LATIN: POETRY.** (3 credits: *Prerequisite:* as for 114-310B).

- **114-317A INTERMEDIATE LATIN (PROSE(.** (3 credits; *Prerequisite:* as for 114-310B).

114-318B INTERMEDIATE LATIN: PROSE. (3 credits; *Prerequisite:* as for 114-310B) Tacitus: Agricola.
Professor Woloch

- **114-319B INTERMEDIATE LATIN LITERATURE: MEDIEVAL LATIN I.** (3 credits; *Prerequisite:* as for 114-310B).
Professor McCullagh

114-410 to 114-419 SENIOR LATIN LITERATURE (POETRY). *(Prerequisite:* Intermediate Latin Literature or permission of the Department). *Offered in 1982-83:* 114-415A Horace.
Professor McCullagh

114-450 to 114-459 SENIOR LATIN LITERATURE (PROSE). *(Prerequisite:* as for 114-410 to 114-419). Offered in 1982-83: 114-456B.
Professor Richardson

LITERATURE COURSES: ANCIENT GREEK

114-321A INTERMEDIATE ANCIENT GREEK: PROSE. (3 credits; *Prerequisite:* Classics 114-220D or permission of the Department). Plato, *Apology;* Xenophon, *Apology;* composition based on Plato, *Crito;* grammatical review.
Professor Silverthorne

114-322B INTERMEDIATE ANCIENT GREEK: PROSE. (3 credits; *Prerequisite:* as for 114-432A). Readings in later Greek authors.
Professor McCullagh

114-323A INTERMEDIATE ANCIENT GREEK: HOMER. (3 credits; *Prerequisite:* as for 114-321A). Elements of Homeric grammar, prosody and metre; survey of the historical background; reading and translating of some relevant passages of the *Iliad* with pertinent commentary and discussion (Not open to students who have taken 114-323D).
Professor Vivante

114-324B INTERMEDIATE ANCIENT GREEK (POETRY). (3 credits; *Prerequisite:* as for 114-321A). Readings in Greek Drama. (Not open to students who have taken 114-323D).
Professor Snider

- **114-325B INTERMEDIATE ANCIENT GREEK: PROSE.** (3 credits; *Prerequisite:* as for 114-321A). The Attic orators.

- **114-326A INTERMEDIATE ANCIENT GREEK: POETRY.** (3 credits; *Prerequisite:* as for 114-321A). Elements of Homeric grammar, prosody and metre; survey of the historical background; reading and translating of some relevant passages of the *Odyssey* with pertinent commentary and discussion. (Not open to students who have taken 114-323D).

- **114-327B INTERMEDIATE ANCIENT GREEK: POETRY.** (3 credits; *Prerequisite:* as for 114-321A). Readings in *Epic.*

114-420 to 114-429 SENIOR ANCIENT GREEK LITERATURE (POETRY). *(Prerequisite:* Intermediate Ancient Greek Literature or permission of the Department). Offered in 1982-83: 114-428B (3 credits). Lyric Poetry.
Professor Vivante

114-460 to 114-469 SENIOR ANCIENT GREEK LITERATURE (PROSE(. *(Prerequisite:* as for 114-420 to 114-429). Offered in 1982-83: 114-464A (3 credits). Herodotus.
Professor Snider

LITERATURE COURSES: MODERN GREEK

114-331A THE LANGUAGE AND CIVILIZATION OF MODERN GREECE I. (3 credits, *Prerequisites:* 114-235D or 237A or permission of instructor). Competence in the language at the intermediate level through the study of grammar, vocabulary and derivatives. Excepts in prose and poetry introducing the civilization of modern Greece.
Professor Farmakides

114-335B THE LANGUAGE AND CIVILIZATION OF MODERN GREECE. (3 credits; *Prerequisites:* 114-237A or 114-331A or permission of the instructor). A continuation of 114-331A.
Staff

114-336A INTRODUCTION TO MODERN GREEK LITERATURE I. (3 credits; *Prerequisites:* 114-235D or 237A or permission of the instructor). This course acquaints students with standards of language determined by some of the best modern Greek writers.
Professor Farmakides.

- **114-337A MODERN GREEK GRAMMAR III.** (3 credits; *Prerequisite:* 114-237B or permission of the instructor).
Professor Farmakides

114-338B INTRODUCTION TO MODERN GREEK LITERATURE II. (3 credits; *Prerequisite:* 114-237A, 331A or 338B). Two Greek novelists chosen from among E1. Venezis, G. Theotokas, A. Samarakis, D. Hatzis.
Professor Farmakides

114-430 to 114-439 SENIOR MODERN GREEK LITERATURE. *(Prerequisite:* 114-335B, 338B or permission of the instructor).

114-432A MODERN GREEK POETRY I. (3 credits). C. Palamas and his time.
Professor Farmakides

114-439B MODERN GREEK GRAMMAR V. (3 credits). A diachronic study of the language through New Testament and Ancient Greek readings, and through translations into literary demotic.
Professor Farmakides.

COURSE TABLE

This table lists all courses offered by the Department of Classics arranged in numerical order.

- *Denotes not offered in 1982-83.*

114-200A GREEK CIVILIZATION (FROM ITS BEGINNINGS TO THE PERSIAN WARS)

114-201A ANCIENT GREEK HISTORY

- 114-202B GREEK CIVILIZATION (FIFTH CENTURY B.C. AND LATER)

114-203A/B INTRODUCTION TO GREEK MYTHOLOGY

- 114-204B INTRODUCTION TO ANCIENT GREEK RELIGION

114-205D INTRODUCTION TO CLASSICAL ARCHAEOLOGY: METHODS AND TECHNIQUES

- 114-207A CLASSICS IN TRANSLATION

114-208B ROMAN LITERATURE AND SOCIETY.

114-211A LATIN LANGUAGE LEVEL ONE: INTRODUCTORY LATIN

114-212B LATIN LANGUAGE LEVEL TWO

114-213A LATIN LANGUAGE LEVEL THREE

114-214B INTERMEDIATE LATIN LITERATURE

114-220D INTRODUCTORY ANCIENT GREEK

- 114-221A ANCIENT GREEK FOR SPEAKERS OF MODERN GREEK

114-235A MODERN GREEK GRAMMAR I

114-236A MODERN GREEK SPOKEN I

114-237A MODERN GREEK GRAMMAR II

114-238B MODERN GREEK SPOKEN II

114-241B ANCIENT HISTORY (ROMAN)

114-300B GREEK DRAMA AND THE THEATRE

- 114-301D SEMINAR IN ANCIENT GREEK HISTORY

114-302A WOMEN IN GREEK DRAMA

114-303D SEMINAR IN ROMAN HISTORY

114-304B GREEK POLITICAL IDEAS

114-305D GREEK AND ROMAN ARCHAEOLOGY

- 114-306B THE ROMAN CITY IN CIVILIZATION
- 114-307A INTRODUCTION TO ROMAN COMEDY

114-308B THE BARBARIAN KINGDOMS AND THE LATER ROMAN EMPIRE

- 114-309B THE GREEK AND ROMAN NOVEL (IN TRANSLATION)

114-310A INTERMEDIATE LATIN: PROSE

- 114-311B INTERMEDIATE LATIN: POETRY

114-312A INTERMEDIATE LATIN: POETRY

- 114-313A INTERMEDIATE LATIN: PROSE
- 114-314B INTERMEDIATE LATIN: PROSE

115-315B INTERMEDIATE LATIN: POETRY

- 114-316B INTERMEDIATE LATIN: POETRY
- 114-317A INTERMEDIATE LATIN: PROSE

114-318B INTERMEDIATE LATIN: PROSE

- 114-319B INTERMEDIATE LATIN LITERATURE: MEDIEVAL LATIN I

114-321A INTERMEDIATE ANCIENT GREEK: PROSE

114-322B INTERMEDIATE ANCIENT GREEK: PROSE

114-323A INTERMEDIATE ANCIENT GREEK: HOMER

114-324B INTERMEDIATE ANCIENT GREEK: POETRY

- 114-325B INTERMEDIATE ANCIENT GREEK: PROSE
- 114-326A INTERMEDIATE ANCIENT GREEK: POETRY
- 114-327B INTERMEDIATE ANCIENT GREEK: POETRY

114-331A THE LANGUAGE AND CIVILIZATION OF MODERN GREECE I.

114-335B THE LANGUAGE AND CIVILIZATION OF MODERN GREECE II.

114-336A INTRODUCTION TO MODERN GREEK LITERATURE I.

- 114-337A MODERN GREEK GRAMMAR III

114-338B INTRODUCTION TO MODERN GREEK LITERATURE II

- 114-340B PROBLEMS IN GREEK MYTHOLOGY

114-400A THE IDEA OF EPIC

- 114-401A HELLENISTIC HISTORY

114-403A MODERN GREEK HISTORY FROM 1204-1821

114-404B MODERN GREEK HISTORY FROM 1821-1945

114-405A GREEK AND ROMAN LITERARY CRITICISM

- 114-406B ROMAN COMEDY AND HUMOUR
- 114-407A LATER GREEK PHILOSOPHY
- 114-409A INTRODUCTION TO GREEK AND ROMAN NUMISMATICS

114-410-419 SENIOR LATIN LITERATURE (POETRY)

114-420-429 SENIOR ANCIENT GREEK LITERATURE (POETRY)

114-430-439 SENIOR MODERN GREEK LITERATURE

114-440-449 SENIOR CLASSICS SEMINARS

- **114-442B STYLE AND COMPOSITION**

114-450-459 SENIOR LATIN LITERATURE (PROSE)

114-460-469 SENIOR ANCIENT GREEK LITERATURE (PROSE)

114-470D REGIONAL STUDIES IN CLASSICAL ARCHAEOLOGY

- **114-471D ROMAN IMPERIAL HISTORY**
- **114-472D GREECE UNDER THE ROMAN EMPIRE**
- **114-474B GREEK RELIGIOUS PRACTICES**
- **114-475A ROMAN BRITAIN**
- **114-476B HOMERIC ARCHAEOLOGY**

114-482B INDEPENDENT RESEARCH COURSE FOR STUDENTS IN JOINT HONOURS IN ANTHROPOLOGY AND CLASSICAL ARCHAEOLOGY.

114-484B CLASSICAL IDEAS

EAST ASIAN LANGUAGES AND LITERATURES (117)

Associate Professor – M. LOCK *(Chairman)*
Assistant Professor – W. GEDDES
Lecturers – J. CHANG, P. WANG

3434 McTavish Street, Montreal, PQ, H3A 1X9
Telephone: 392-4582

General Information

The Chinese language courses introduce students to the living language of modern China, and we encourage enrolment from all disciplines in the university. Textbooks used are published in China, and supplemented by teaching materials prepared by the departmental staff.

Two levels of Japanese language will be offered and a Japanese literature course in translation will be offered for students who are interested in Japanese literature but unable to read Japanese.

It is hoped that students majoring in East Asian Studies will enrol in the language courses in addition to any other students interested in learning the language. Honours students must complete a three-year language sequence.

Course Descriptions

- *Denotes not offered 1982-83.*

117-201A INTRODUCTION TO CHINESE LITERATURE I. (3 credits). A survey of the historical background of Chinese literature and the evolution of literary forms and styles in Chinese to the May 4th Movement. (In translation). (Not open to students who have taken 117-201D).
Professor Hsia

117-202B INTRODUCTION TO CHINESE LITERATURE II. (3 credits). A survey of the historical background of Chinese literature and the evolution of literary forms and styles in Chinese from the May 4th Movement to the present. (In translation). (Not open to students who have taken 117-201D).
Professor Hsia

117-210D FIRST LEVEL CHINESE. (6 credits). Introduction to the Basic structures of modern Chinese in both the Pin-yin system and ideograms (450 characters and 1,200 compounds approximately). Emphasis on speaking and reading, direct method with tapes and filmstrips for audio-lingual achievements.
Mrs. Wang

117-211D INTRODUCTION TO CONVERSATIONAL CHINESE. (6 credits). This course is designed for students with some background in the Chinese written language, who wish to perfect their ability to speak Chinese.
Ms. Chang

117-220D SECOND LEVEL CHINESE. (6 credits; *Prerequisite:* Chinese 117-210 or the equivalent). A continuation of Chinese 117-210D with more advanced study of Chinese language in both aspects of reading and conversation, grammar, vocabulary building and writing practice. Chinese movies on *video-tape* will be used as part of texts.
Mrs. Wang

117-310D THIRD LEVEL CHINESE. (6 credits; *Prerequisite:* Chinese 117-220D or the equivalent). Based upon the level achieved in Chinese 220D, more advanced texts will be studied including original materials. Extra materials will be provided to suit student's needs in carrying out conversations or discussions on subjects which are of interest to North American students. (Not open to students who have taken 117-300D).
Ms. Chang

117-311D INTERMEDIATE CONVERSATIONAL CHINESE. (6 credits); *Prerequisite:* 117-211D or an elementary knowledge of spoken Chinese). The course will further improve the students' ability to speak Chinese and prepare them to carry out academic discussions and debates.
Ms. Chang

117-410D FOURTH LEVEL CHINESE. (6 credits; *Prerequisite:* Chinese 117-310D or the equivalent). Emphasis is on reading skills and writing ability in addition to free discussion. Materials studied include original texts from Chinese literature, drama, government documents and newpapers. (Not open to students who have taken 117-400D).
Ms. Chang

117-205D HISTORY OF JAPANESE LITERATURE. (6 credits). *Offered in alternate years.* A survey of the historical background of Japanese literature up to the contemporary period. Students are

referred to translated texts, and knowledge of Japanese is not required.
Professor Geddes

117-215D FIRST LEVEL JAPANESE. (6 credits). Introduction to the basic grammar and sentence patterns of the Japanese language in both oral and written forms. In reading and writing skills students will be introduced to *katakana* and *hiragana,* and approximately 300 *kanji.*
Professor Geddes

117-216D SECOND LEVEL JAPANESE. (6 credits; *Prerequisite:* 117-215D or the equivalent). Continuation of the study of oral and written Japanese. More complex sentence structures, the use of *keigo,* and approximately 500 more *kanji* will be introduced.
Professor Geddes

117-315D THIRD LEVEL JAPANESE. (6 credits; *Prerequisite:* 117-215D or the equivalent). More advanced study of the Japanese language. Emphasis will be placed on practice in conversation and composition.
Professor Geddes

- **117-305D CONTEMPORARY JAPANESE LITERATURE.** (6 credits). Discussion of creative writings by several Japanese authors from the early Meiji period (1868-1912) to the present. No knowledge of Japanese language is required. Students with an equivalent of 4 years study of Japanese must do some readings in the original. Native speakers of Japanese must have completed or be currently enrolled in a major involving the study of literature or literary criticism.
Professor Geddes

- **117-306D THE JAPANESE NOVEL IN ENGLISH TRANSLATION.** (6 credits). *Offered in alternate years.* A study of the development of Japanese fiction. Major prose works ranging from the earliest classics through contemporary writing will be read in English translation. The continuity of native Japanese forms and values despite the pressure of foreign culturals and literary influxes will be stressed. No knowledge of Japanese is required.
Profesor Geddes

- **117-405D ADVANCED TOPICS IN JAPANESE LITERATURE.** (6credits; *Prerequisite:* 117-305D or 405D or consent of the instructor). Consideration of selected topics and aspects of Japanese literature. The content of the course may vary from year to year, ranging from contemporary, modern to pre-modern literature.
Professor Geddes

117-492D TUTORIAL. (6 credits). Advanced reading course in language or literature.

ECONOMICS (154)

Professors – A. ASIMAKOPULOS; E.F. BEACH; I. BRECHER; A. DEUTSCH; C. GREEN *(on leave 1982-83);* J.C.R. ROWLEY; J.C. WELDON; H.R.C. WRIGHT
Associate Professors – P. DAVENPORT; A. FENICHEL; M. FRANKMAN; G. GRANTHAM; J. HANDA; S.H. INGERMAN; J. ITON; J. KURIEN *(on leave 1982-83);* K. LEVITT *(on leave 1982-83);* R.T. NAYLOR; L. SODERSTROM; T. VELK *(on leave 1982-83);* A. VICAS
Assistant Professors – R. CAIRNS; W. WATSON

Room 434, Stephen Leacock Building,
Montreal, PQ, H3A 2T7.
Telephone 392-5239.

HONOURS PROGRAMS

All honours students must be registered by the Departmental Honours Adviser at the beginning of each year of their Honours program. An Honours student is not permitted to register for a general course where a parallel Honours course is offered. Honours students in economics are expected to take a minimum of 42 credits in approved economics courses over the three years of their program. These generally include 154-250D, 154-352D, 154-357D, 154-450D and 154-460D.

The Economics Honours program is offered to both B.A. and B.Com. students. The program allows for specialization in various fields in economics, such as labour, international trade, money and banking, development, economic history, etc.

HONOURS STANDING

Students who wish to enter Honours in their U2 year must show evidence of adequate preparation.

To remain in Honours, a student must obtain an A or B in 154-250D and a 3.0 average in the Honours subjects. An Honours student is expected to maintain a G.P.A. of 3.0 in all subjects.

A U1 student who narrowly missed the criteria to remain in Honours as stated in the preceding paragraph may apply for "redemptive" status for the U2 year. If granted, the student is not registered in Honours, but may take Honours courses. With acceptable progress the student may be readmitted to Honours in the U3 year.

The Honours standing awarded on graduation is determined by the results of the final year in conjunction with the student's entire record.

MATHEMATICS

Much of the modern literature in Economics makes use of mathematical techniques. To enable honours students to work effectively with this literature, we recommend that during their

program students master as much as possible of the material taught in the following courses (or their equivalents):

189-233A – Mathematics for Economists I
189-234B – Mathematics for Economists II

The student may alternatively take:

189-120A or B – Calculus I
189-121A or B – Calculus II
189-245A or B – Linear Algebra I
189-246A or B – Linear Algebra II

(Students could take these courses in their U1 year or spread them out between the U1 and U2 years.)

U1 YEAR

Economics: 154-250D, 154-357D. (May be taken in U1 or U2). (Recommended optional course: Mathematics 189-233A and 189-234B).

U2 YEAR

Economics: 154-352D, 154-357D, 154-460D (May be taken in U1 or U2). (Recommended optional course: Mathematics 189-233A and 189-234B, if these have not been taken in U1).

U3 YEAR

Economics: 154-450D.

Other Economics courses approved by the Honours Adviser.

JOINT HONOURS

Joint Honours programs between Economics and various other departments in the Faculties of Arts and Management exist. As a general rule, a Joint Honours program involving Economics requires a minimum of thirty credits from approved courses in Economics. These include 154-250D, 154-350D, 154-352D, 154-357D, 154-450D and 154-460D.

The Joint Honours programs with the Faculty of Management are: B.Com. Joint Honours in Economics and Accounting (available only to B.Com. students); B.Com. Joint Honours in Economics and Finance (available only to B.Com. students); B.A. Joint Honours in Economics and Finance (available only to B.A. students). Interested students should consult their advisers for details on these programs.

THE MAJOR PROGRAM

The Major Program in Economics is a planned sequence of courses designed to permit the student a degree of concentration in economics. It consists of 54 credits in courses approved by the Majors Committee of the Economics Department.

A student choosing a Major in Economics must take at least 30 credits of economics in addition to Economics 200D or its equivalent, and must normally take them at McGill. The economics courses will be selected from the courses shown below:

A. Prerequisite

Economics 200D or its equivalent: Economic Analysis and Applications.

B. Required Courses (12 credits)

Economics 300A – Intermediate Economic Theory – Microeconomics.
Economics 310B – Intermediate Economic Theory – Macroeconomics.
Economics 317D – Economic Statistics for Arts students.

C. Economics Elective Courses: At least 18 credits from other 200, 300, and 400 level courses.

D. Other Approved Courses:

In addition to the minimum of 36 credits in Economics, the student will choose a total of 18 credits from *two* of the following fields:

Anthropology
Economics
French Canada Studies
Geography
History
Mathematics
Philosophy
Political Science
Psychology
Sociology

An interdisciplinary Major in Economics and Political Science is also available to interested students. For information on this and other Majors programs, the student should consult the Majors Adviser.

All students who wish to begin (or continue) a Major *must* register with the Majors Committee in the Department of Economics prior to general registration in each of their university years. Further information may be obtained from the Major Adviser; consult the Departmental office.

Course Descriptions

Supplementary Information: This announcement is prepared early in the year and so is likely to need modification by the time the academic year begins. A mimeographed supplement is available at the departmental office in September and should be consulted prior to registration with the Honours or Major advisers.

Economics 200D, the combination of 203A and 204B, OR 250D is normally a **prerequisite** for all

300 and 400 level courses in Economics. Students can obtain an exemption from this prerequisite by passing a special examination offered by the Department during the Fall and January registration periods. Students whose previous training is deemed adequate for taking specific courses at the 300 or 400 level may be exempted from this prerequisite by the instructor. A departmental representative will be available to advise students and program advisers in other departments on individual course prerequisites.

• *Denotes a course not offered in 1982-83.*

154-200D ECONOMIC ANALYSIS AND APPLICATIONS. (6 credits). A University level introduction to price theory, national income determination, money and banking, international trade theory and economic policy. The course will be given in several sections. (Not open to students who have taken or are taking 154-202B, 154-203A or 154-204B).
Professors Deutsch and Watson

154-201D THE ECONOMIC DEVELOPMENT OF WESTERN CIVILIZATION. (6 credits). A survey course in the economic development of western civilization from classical times to the twentieth century. The course will consider the evolution of economic institutions and the process of economic growth. Topics covered include demographic change, agrarian institutions,financial and industrial organization, technological change and the expansion of trade and markets.
Professor Grantham

154-202B ECONOMICS FOR ENGINEERS. (3 credits; Prerequisite: 189-263A or equivalent). An introduction to microeconomics designed for engineering students. Economic theory will be developed using mathematical techniques where appropriate. Applications of economic theory to the analysis of economic problems, with particular reference to Canada, will be considered. (Students who desire a further course in economic theory after 154-202B should take 154-203A).
Professor Vicas

154-203A MACROECONOMIC ANALYSIS AND APPLICATIONS. (3 credits). This course covers the macroeconomic material contained in 154-200D. (Not open to students who have taken or are taking 154-200D).
Professor Vicas

154-204B MICROECONOMIC ANALYSIS AND APPLICATIONS. (3 credits). This course covers the microeconomic material contained in 154-200D. (Not open to students who have taken or are taking 154-200D or 154-202B).
Professor Ingerman

154-205D AN INTRODUCTION TO POLITICAL ECONOMY. (6 credits). Examination of selected problems in applied economics in both a Canadian and international context. In dealing with these problems emphasis will be on developing the capacity of students to apply economic reasoning.
Professors Fenichel and Naylor

154-211D INTRODUCTION TO CANADIAN ECONOMIC HISTORY. (6 credits). A survey of the economic basis of Canadian history from the French regime to the twentieth century, with a view to examining the historical roots of contemporary problems of the Canadian economy and society. The structure role and evolution of economic institutions are stressed.
Professor Wright

154-250D INTRODUCTION TO ECONOMIC THEORY – HONOURS. (6 credits). The standard topics covered in an intermediate level microeconomic course – theory of exchange; theory of consumer behaviour; theory of production and cost curves, theory of the firm; theory of distribution; general equilibrium; welfare economics – will be dealt with in the course. The assumptions underlying the traditional neoclassical approach to economic theory will be carefully specified and alternative theoretical approaches will be considered.
Professor Asimakopulos

154-300A INTERMEDIATE ECONOMIC THEORY. (3 credits). Microeconomics: Analysis of price determination in a market economy, problems of economic efficiency and market structures.
Professor Grantham

154-302D MONEYAND BANKING. (6 credits). Principles of money, banking, and central banking covering the nature of money, measurement of money supply, determination of the quantity of money; sources of bank funds, uses of bank funds, nature of central banking, monetary policy and the international payments system.

154-304D CANADIAN ECONOMIC POLICY. (6 credits). The objective of this course is to teach and to practise the use of simple tools of economics for the analysis of real life problems in a Canadian setting.
Professor Watson

154-305D GOVERNMENT AND BUSINESS. (6 credits). A study of the structure and performance of industrial markets, with particular emphasis on the problems of maintaining effective competition. Experience in Canada and other countries will be examined. Readings will cover leading law cases, as well as relevant economic literature.

154-306D LABOUR ECONOMICS AND INSTITUTIONS. (6 credits). Part A: Quantitative and qualitative characteristics of the Canadian labour force; evolution of the industrial relations system; history and structure of the labour movement, theories of the labour movement, elements of

labour law. Part B: Employment and unemployment; manpower policy; wage theory; collective bargaining and public policy; income distribution and problems of poverty; current policy issues. (This is a prerequisite course to 154-426D and 279-492D except in the case of Honours students).
Professor Ingerman

154-310B INTERMEDIATE ECONOMIC THEORY. (3 credits). Macroeconomics: Analysis of economic stability; national income determination, economic fluctuations and growth, monetary and fiscal policy.
Professor Grantham

154-311A,B UNITED STATES ECONOMIC DEVELOPMENT. (3 credits). A study of economic growth and institutional change in the United States. Emphasis will be placed on the use of categories and theories economists have developed for such studies.
Professor Fenichel

- **154-312D POLITICAL ECONOMY OF DEPENDENCE IN THE WESTERN HEMISPHERE.** (6 credits). A comparative study of contemporary economic structures in the "peripheral" economies of Canada, the Caribbean and Latin America – with special emphasis on Canada and its constituent regions. The legacy of European colonization; trade and investment; operations of multinational corporations; preferences, common markets and foreign aid; the new economic nationalism of the western hemisphere.

154-313D ECONOMIC DEVELOPMENT. (6 credits). The economics of structural change in developing countries. An examination of the applicability of economic theory in the context of development. Historical patterns of economic change in the developing world; economic planning; role of international trade and foreign aid in economic development; techniques of evaluating development projects; interdisciplinary problems of development.
Professor Frankman

- **154-315B ECONOMIC DEVELOPMENT OF CHINA.** (3 credits). A consideration of economic change in China since 1949. Emphasis is on the approach China has taken to development, its success in solving problems in various sectors of the economy and a comparison with approaches to development used in other countries.

154-317D ECONOMIC STATISTICS. (6 credits). Distributions, averages, dispersions, sampling, testing, estimation, correlation, regression, index numbers, trends and seasonals.
Professor Beach

154-321D THE QUÉBEC ECONOMY. (6 credits). A study of the economic development of Québec and contemporary economic problems in the province. Topics include: economic history since 1900; industrial structure, trade and foreign ownership; unemployment, poverty, and the labour market; government finance and federal-provincial economic relations; independence and the economic program of the Parti Québécois.
Professor Davenport

- **154-331A THE ECONOMIC DEVELOPMENT OF RUSSIA AND THE USSR.** (3 credits; *Prerequisite:* any Economics 154-200 level course). An historical and analytical study of the special features of Russian economic development, mainly since 1890.

154-337A ELEMENTARY ECONOMETRICS. (3 credits; Prerequisite: a grade of 65% or better in Economics 154-317D or 154-357D or an equivalent qualification in Statistics). The practical application of quantitative methods in statistical investigations.
Professor Cairns

- **154-340A,B/341A,B/342A,B MODERN ECONOMIC HISTORY OF A SELECTED WORLD AREA.** (3 credits; Prerequisite: 154-201D, 154-211D or consent of instructor). A course in the modern economic history of South Asia, Latin America or other areas. These could vary from year to year. The student should check the area of focus before registering for the course.

154-343D THE INTERNATIONAL ECONOMY SINCE 1850. (6 credits). The effect of economic change in Britain, France, Germany, and the United States on the world economy and on the economic relations between nations. (Not open to students who have taken 154-241D).
Professor Wright

154-352D MACROECONOMICS – HONOURS. (6 credits). A rigorous treatment of basic macroeconomic theory, emphasizing the Classical and Keynesian ideas, for the short-run determination of output, employment, interest rates and prices in the economy. Elements of international economics, money and banking and growth theory. The structure of the Canadian economy.
Professors Davenport and Handa

154-357D ECONOMIC STATISTICS – HONOURS. (6 credits). Stochastic phenomena; probability and frequency distributions, introduction to probability theory. Statistical inferences about proportions, means and variances; analysis of variance; non-parametric statistics; index numbers and time series; economic forecasting; regression and correlation analysis; introduction to the general linear economic models, its uses and limitations; uses and misuses of statistics; Canadian economic statistics.

- **154-400D THEORY OF THE FIRM.** (6 credits). The economic analysis of the firm: numerous case studies are used to supplement the survey of theory. Topics covered include pricing decisions

by firms under different market conditions, the role of financial markets in affecting business behaviour, mergers, conglomerates and multinational corporations, crown corporations, the performance of firms in regulated industries.

- **154-404A TRANSPORTATION.** (3 credits). History and development of the Canadian transportation system; economic characteristics of the various transportation media; comparative analysis of cost and rate structures; problems of regulation and control. (Not open to students who have taken 154-404D).

154-408D PUBLIC FINANCE. (6 credits). A survey of the economist's view of government activity. The theory of public spending and various modes of taxation is emphasized. Canadian institutions are reviewed in an analytical perspective.
Professor Deutsch

- **154-409D INVESTMENT ANALYSIS AND CORPORATION FINANCE.** (6 credits). Part I – investment; capital markets; investment funds; securities; concepts of income, risk, value and appreciation; analysis of financial statements; stock market; investment policy. Part II – Forms of business organization; growth of the corporation; the managerial revolution; sources of funds; management of fixed and working capital; ratio analysis; expansion, reorganization and valuation.

- **154-410A,B/411A,B/412A,B ECONOMIC DEVELOPMENT OF A SELECTED WORLD AREA.** (3 credits each; *Prerequisite:* 154-313D or consent of instructor). An advanced course in the economic development of a pre-designated underdeveloped country or group of countries.

154-413A,B/414A,B/415A,B/416A,B SELECTED TOPICS IN ECONOMIC DEVELOPMENT. (3 credits each; *Prerequisite:* 154-313D or consent of instructor). This course represents an advanced study of the processes of economic development. It will focus on the dominant forces making for development. *Offered in 1982-83:* 154-413A: Topic: Employment and Income Distribution. Consideration will be given to the growth of employment, underemployment and unemployment. Discussion will include the role of migration, the informal sector, basic needs and public policy.
Professor Frankman

154-421D COMPARATIVE ECONOMIC SYSTEMS. (6 credits). A study of the organizational forms of economic life and their evolution. The focus is on non-capitalist economies.

154-423D INTERNATIONAL TRADE AND FINANCE. (6 credits; for Major students). Theoretical and policy approaches to the study of international economic relations. Topics examined include: trade theory; tariff theory; trade and growth; balance of payments; adjustment; international monetary reform.
Professor Brecher

154-425B ECONOMICS OF ECOLOGY. (3 credits). A study of the application of economic theory to the problems of ecology. Particular attention will be given to the measurement and regulation of pollution, congestion and waste and other environmental aspects of specific economies.
Professor Vicas

154-426D LABOUR ECONOMICS. (6 credits). Focus on inflation problems and incomes policy during the fall and on current unemployment problems during the spring. Traditional models of unemployment as well as recent work on the effects of the rapid growth of women and youths in the labor force, changes in unemployment insurance legislation and the search behaviour of employers and workers. The discussion of inflation and incomes policy will include a review of the literature on wage determination and the experiences Canada and other countries have had with incomes policies.
Professor Soderstrom

- **154-427A POPULATION ANALYSIS IN DEVELOPMENT ECONOMICS.** (3 credits; *Prerequisites:* 154-313D, 154-317D or 154-357D, or consent of instructor). A review of theories of population growth, past trends and forecasts. Analysis of population change in developing countries, mortality, fertility, and migration. A study of interrelations between population growth and economic development in these less-developed economies. (Not open to students who have taken 154-327).

154-431B SEMINAR IN CANADIAN ECONOMIC HISTORY. (3 credits; *Prerequisite:* 154-200D or 203A and 204B and either 154-211D or 154-321D). A discussion of selected topics in Canadian Economic History.
Professor Naylor

154-434A CURRENT ECONOMIC PROBLEMS. (3 credits). A discussion of contemporary problems of the Canadian economy. Topics will include the relations of big business and government, foreign investment and technological dependence, the distribution of income, the balance of payments, the economics of resource exploitation, and the "energy crisis".
Professor Naylor

154-440B HEALTH ECONOMICS. (3 credits; *Prerequisite:* 154-200D or 203A and 204B or consent of instructor). An examination of various problems in the provision of health services from an economist's perspective. Topics will include the determinants of health, the economic performance of physicians, hospitals and other providers of health services, and the determinants of demand for health services. Various proposed reforms of the health system will be reviewed.

Readings will be drawn from the economics and health care literature.
Professor Soderstrom

154-441A/B MARXIAN ECONOMICS. (3 credits; *Prerequisite:* 154-200D or consent of the instructor). A critical examination of Marxian economic thought based on Marx's works as well as recent Marxian writings. The foundations of Marxian economic ideas; the Marxian analysis of capitalist production and the capitalist system; the place of Marxian theories in contemporary economic analysis and their application to current economic problems.
Professor Weldon

- **154-444A VALUES, INSTITUTIONS AND ENVIRONMENT IN ECONOMICS.** (3 credits). A critical examination of the scope and method of economics, of the philosophical and value underpinnings of economic theory, and the influence of institutions and environment on 'economic' phenomena. Particular attention will be given to the works of writers who have dissented from the 'mainstream' of economics. (Not open to students who have previously taken 154-455B).

154-450D ADVANCED ECONOMIC THEORY – HONOURS. (6 credits). Selected topics in economic theory from recent periodical and monograph literature. Information on the topics to be covered can be obtained from the Department before registration.
Professors Asimakopulos and Handa

- **154-451B SEMINAR IN ECONOMIC HISTORY.** (3 credits). In this course economic theory is explicity employed to elucidate issues in economic history. The topics will be announced at the beginning of the academic year. (Not open to students who have previously taken 154-401A).

154-453D INTERNATIONAL ECONOMICS – HONOURS. (6 credits, for Honours students). Analysis of the nature, effects and policy implications of international trade and finance. Topics receiving special emphasis will include: the pure theory of trade; the balance of payments and alternative exchange-rate systems; the terms of trade; the foreign-trade multiplier; regional integration; trade policy in developed and developing countries; problems of international liquidity and investment.
Professor Iton

154-458D MONEY AND BANKING – HONOURS. (6 credits). An advanced undergraduate treatment of selected topics in money and banking, including the theory and practice of monetary policy..

154-460D HISTORY OF ECONOMIC THOUGHT – HONOURS. (6 credits). A critical study of the writings of the great economists, with particular reference to the period from Adam Smith to the present day. (Not open to students who have taken 154-350D).
Professor Weldon

154-467D ECONOMETRICS – HONOURS. (6 credits; *Prerequisites:* 189-234B and 154-357D or consent of instructor). Special emphasis on statistical tests of economic theories, the construction of econometric models, and problems in estimation methods.
Professor Rowley

154-480A RESEARCH PROJECT. (3 credits; open to U3 students). Students may undertake a research project under close supervision. They must also do such special reading and research as their advisers may direct.

154-481B RESEARCH PROJECT. (3 credits; open to U3 students). Students may undertake a research project under close supervision. They must also do such special reading and research as their advisers may direct.

154-505B RESOURCE ECONOMICS. (3 credits; *Prerequisite:* 154-200D or 154-250D). Selected topics in resource economics to include (i) Malthusian and Ricardian scarcity; (ii) the optimal depletion of renewable and non-renewable natural resources; (iii) exploration, risk, and industry structure, and, (iv) resource rents and taxation. Will also examine current public policies applied to the resource industries, particularly those of a regulatory nature. (Not open to students who have taken 154-404D or 154-405B).
Professor Cairns

- **154-568A URBAN AND REGIONAL ECONOMICS.** (3 credits). This course is meant to be an introduction to location theory and to urban and regional economics. Its purpose is also to teach some elementary tools of analysis to people intending to do research, applied or pure, in this field. (Not open to students who have taken 154-468).

- **154-577B MATHEMATICAL ECONOMICS I** (3 credits; Prerequisite: 189-233A or equivalent). A mathematical treatment of basic economic theory. (Not open to students who have taken 154-367D).

- **154-578A,B MATHEMATICAL ECONOMICS II.** (3 credits; Prerequisite: 154-577A,B). A mathematical presentation of economic analysis. Difference and differential equations and their applications in economics. (Not open to students who have taken 154-367D).

189-233A MATHEMATICS FOR ECONOMISTS I. (3 credits). Elements of Elementary Calculus. Functions of several variables. Partial Derivatives. Jacobians. Maxima and Minima. Lagrange Multipliers, Hessians. Infinite Series. Economic Applications. (This course is intended for students in Economics; others may be permitted to enrol with special permission; not open to students in programs in Mathematics; not

available for credit to students in the Faculty of Science).

189-234B MATHEMATICS FOR ECONOMISTS II. (3 credits). Matrices. Transpose. Trace of a matrix. Inverse. Determinants. Orthogonal matrices. Indempotency. Non-negative matrices. Input-output analysis. Inequalities. Linear dependence and independence. Rank. Least-squares problems. Linear transformations. Characteristic roots and vectors. Quadratic forms. Generalized inverses. Systems of linear equations. Gaussian elimination and Guass-Jordan reduction. Economic applications. (This course is intended for students in Economics; others may be permitted to enrol with special permission; not open to students in programs in Mathematics; not available for credit to students in the Faculty of Science or to students who have taken or are taking 189-223, 224, 245 or 247).

ENGLISH (110)

Professors – C.D. CECIL; L. DUDEK *(on leave 1982-83);* D.C. FRYE; A. HEUSER; S. KLIMA; A.E. MALLOCH; H. McPHERSON; P. OHLIN; M. PUHVEL; J. RIPLEY *(on leave 1982-83);* D. SUVIN

Associate Professors – H.S. ANDERSON; D. BOUCHARD; M. BRISTOL: C.A. CONWAY; M. DAVISON; M. DORSINVILLE: L.T. DUER *(on leave 1982-83);* L.T. ELLIOTT; I. GOPNIK; C.A.E. HEPPNER; W. HILLGARTNER; L. LIEBLEIN *(on leave 1982-83);* Y. LINDEMAN; P.H. PIEHLER; R. REICHERTZ; B. ROBINSON; J. RONSLEY *(on leave 1982-83);* M. STENBAEK-LAFON *(on leave 1982-83);* L. TROIDE *(on leave 1982-83);* B.F. WEEMS; W. WEES; D. WILLIAMS *(on leave 1982-83)*

Assistant Professors – B.J. ANDERSON; D. CROWLEY; P. LIVINGSTON

Faculty Lecturers – W.T. BOOTH; A.R. GODFREY

Departmental Office: Room 155, Arts Building,
853 Sherbrooke Street West,
Montreal, PQ, H3A 2T6
Telephone: 392-4987.

The Department of English offers a wide variety of courses covering three linked and overlapping areas: English, American, Canadian, and Caribbean and African literature written in English; drama, including both courses in dramatic literature and courses that introduce the student to the basic elements of theatrical performance; and film and communications, including work in the mass media. These three areas are integrally related, and all Major students in English are required to do work in all three, while concentrating in one of then. Most courses within the department are open to all McGill students, but some courses, particularly in drama and film and communications, have prerequisites, and students seeking elective courses among our upper year courses are advised to consult with the instructor before registering.

Major students are required to take a 54 credit program, the structure of which differs in the three options available. Each student must choose one of these options. *Students are advised to consult the Departmental Handbook for further details of the department's programs, including possible changes.*

Option I – Literature

The Major Program in Literature is designed to give the student a good initial grounding in the basic texts and methods of the discipline, a function filled by a structured group of required courses. This grounding is followed by the requirement that the student take a number of courses that fill in a knowledge of substantial areas of the wide field of literature. The student is then free to choose further courses on the basis of personal and specific interests, providing that certain other requirements are met.

Specifically, the following courses are required: (a) two 3-credit units of *Survey of English Literature,* 110-200A and 201B, to be taken in the first two semesters of study; (b) a 3-credit course, *Fiction,* 110-317A/B, normally taken in the second semester; (c) a 3-credit course, *Poetry,* 110-318A/B normally taken in the third semester; (d) one of (i) a 3-credit course, *Drama* 110-319A/B: (ii) a 3-credit course on *Shakespeare;* (iii) a 6-credit course, *Fundamentals of Drama and Theatre*, 110-269D, taken by students planning further work in Theatre courses.

The second stage of work is satisfied by taking at least 18 further credits in courses which cover a substantial field, chronological, generic,or thematic, of which at least 9 credits must be in literature before 1800. These courses should, for the most part, be at the 300 level or above. A maximum of 21 credits of the program may be taken at the 200 level.

The student can then freely choose the remaining credits, including 6 from another department if approved by an adviser, with the provision that the following requirements are also filled before graduation: (a) at least 3 credits of Shakespeare; (b) at least 3 credits of Film and/or Communications; (c) at least 3 credits of American Literature; (d) at least 3 credits of Canadian Literature.

Option II – Drama and Theatre

The Drama program tries to place its subject in as broad a social and philosophical context as possible, and students are encouraged to include in their programs a substantial number of Humanities, Social Sciences, and Fine Arts courses.

The Drama and Theatre program is not designed to provide professional threatre training. The aim is rather to encourage students to explore the subject as a liberal arts discipline.

Students taking this option concentrate their studies in either Drama *or* Theatre. Those opting for the former area devote more attention to the literary and theoretical aspects of the subject, while those selecting the latter include more practical classes in their programs. All students must, to some extent, combine both practical and theoretical work.

In consultation with their faculty advisers, students select a minimum of 54 credits in English. Twelve of these must be chosen from the Literature and Communications options while the rest are drawn from Drama and Theatre offerings in the following areas: Dramatic Literature, Theatre History, Theatre Aesthetics and Dramatic Criticism, Acting, Directing, and Theatre Practice. Classes are also given in special interest areas from year to year. Generally, two public productions are staged annually, as well as a substantial number of smaller workshop productions.

Option III — Film and Communications

The study of film and communications within the department is concentrated on the problems of human language and interaction, and on the various media through which these may be disseminated and transformed. Such study recognizes the wide role that film and electronic media occupy in modern cultural life,and approaches them from a concern with symbolic form, linguistically based forms of analysis, and the various modes of criticism relevant to media which contain both verbal and non-verbal elements. It should be understood that the program does not stress the kinds of professional training more suitably carried out by institutes of technology; however, limited practical experience can be obtained.

Of the 54 credits required for a major in Film and Communications, 12 are covered by two core courses, 110-275D and 110-378D, to be taken in the U1 and U2 years respectively, and 30 are chosen from other courses in film, communications and media study (of which up to 18 credits may be taken in other departments, with an adviser's approval). Twelve additional credits are to be chosen from the Department of English, 6 in literature courses and 6 in drama courses.

HONOURS PROGRAMS IN ENGLISH

The Honours Program is characterized by the pursuit of a program exhibiting sufficient range and comprehensiveness in depth and breadth within one of the options of Literature, Drama, or Film and Communications, together with some familiarity with the work carried on in each of the other options.

Students who have attained a 3.5 cumulative G.P.A. as a major will be eligible for admisson into the Honours Program in the second senester of their U2 year. Continuation in Honours will depend on the maintenance of a 3.5 C.G.P.A.

Prior to final year registration, Honours students will meet with a member of the Honours Committee to select an Honours supervisor and, in consultation with that supervisor, pan a specific area, period or theme of concentration, that may include previous work. Where possible, the student's program should include nine credits of conference work at the 500 or graduate level. Additionally, Honours students will undertake an Honours Essay worth six credits which, upon petition to the Honours Committee may consist of equivalent work in another medium. The Honours Essay is considered to be a serious research project and will be closely guided by the student's Honours Supervisor.

Graduation in Honours requires sixty credits of English, and the completion of all the requirements for the Major Program.

JOINT HONOURS PROGRAM

Joint Honours programs in English and various disciplines in the Faculty of Arts are available to qualified students. Each student's program is arranged to suit the particular circumstances and interests involved in consultation with an adviser and the Honours Committee. Admission to this program is quite limited. Please consult the departmental office for further details.

DEPARTMENT OF ENGLISH STUDENT'S ASSOCIATION

The DESA is the representative body for the students of the English Department at McGill. Any student taking one or more courses in the department is automatically a member. For more information please read the description in the English Departmental Handbook.

TABLE OF ENGLISH DEPARTMENT COURSES

• *Denotes not offered in 1982-83.*

Students are advised to consult the Departmental Handbook or the department's office staff for further information and possible changes.

Course Descriptions

100-LEVEL COURSES

- **110-100D ENGLISH LITERATURE AND COMPOSITION.** (6 credits).

200-LEVEL COURSES

110-200A SURVEY OF ENGLISH LITERATURE I. (3 credits). A general introduction to English Literature
Professor Davison

110-201B SURVEY OF ENGLISH LITERATURE II. (3 credits; *Prerequisite:* 110-200A or permission of instructor). A general introduction to English Literature.
Professor Weems

110-204D RENAISSANCE ENGLISH LITERATURE. (6 credits). A study of the major writers of the 16th and early 17th centuries. (Not open to students who have taken 110-300D).
Professor Lindeman

110-208A THE ENGLISH NOVEL OF THE 19TH CENTURY I. (3 credits). A study of representative novelists of the earlier 19th century.
Mr. Godfrey

110-209B THE ENGLISH NOVEL OF THE 19TH CENTURY. (3 credits, *Prerequisite:* 110-208A or permission of the instructor). A study of representative novelists of the later 19th century.
Mr. Godfrey

110-210A ROMANTIC POETS: ENGLISH POETRY OF THE 19TH CENTURY. (3 credits).
Professor Heuser

110-211B VICTORIAN POETS: ENGLISH POETRY OF THE 19TH CENTURY. (3 credits).
Professor Heuser

- **110-213A POETRY OF THE 20TH CENTURY I.** (3 credits).
- **110-214B POETRY OF THE 20TH CENTURY II.** (3 credits).

110-215A,B INTRODUCTION TO SHAKESPEARE. (3 credits).
Professors Shaw and Bouchard

110-216B SHAKESPEARE. (3 credits). A survey of Shakespeare's poetry and plays.
Professor Davison

110-225A AMERICAN LITERATURE I. (3 credits). A study of the literary works of earlier American writers. (Not open to students who have taken 110-224L).
Professor Ohlin

110-226B AMERICAN LITERATURE II. (3 credits). A studyof the literary works of later American writers. (Not open to students who have taken 110-224L).
Professor Ohlin

- **110-227B AMERICAN LITERATURE III.** (3 credits).

1101-228B CANADIAN LITERATURE I. (3 credits). Introduction to Canadian poetry.
Professor Conway

110-229A CANADIAN LITERATURE II. (3 credits). Introduction to Canadian prose.
Staff

110-230D AN INTRODUCTION TO DRAMA. (6 credits). A survey of major types and authors of Western Drama.
Professor Suvin

110-232B THE LITERATURE OF FANTASY. (3 credits). The literature of visionary experience.
Professor Piehler

- **110-235A TRAGEDY.** (3 credits).
- **110-236B COMEDY I.** (3 credits).
- **110-237B COMEDY II.** (3 credits).

110-245D BACKGROUNDS TO ENGLISH LITERATURE. (6 credits). From the Greeks to the present, the major outside influences on English literature.
Professor Robinson

110-246D ENGLISH LITERATURE AND FOLKLORE. (6 credits). A study of representative texts of English Literature in relation to their background in folk tradition.
Professor Puhvel

- **110-248D THE GREAT WRITINGS OF EUROPE, 1550-1850.** (6 credits).
- **110-249A AN INTRODUCTION TO ORAL LITERATURE.** (3 credits).
- **110-251D ANGLO-SAXON LITERARY CULTURE.** (6 credits).
- **110-252A,B THE STRUCTURE OF THE ENGLISH LANGUAGE.** (3 credits).
- **110-253A,B THE HISTORY OF THE ENGLISH LANGUAGE.** (3 credits; *Prerequisite:* English 252A,B or Linguistics 200A,B).
- **110-254A,B THE ENGLISH LANGUAGE AND THE STUDY OF LITERATURE.** (3 credits; *Prerequisite:* English 252A,B or Linguistics 200A,B).

110-260D APPROACHES TO LITERARY STUDY. (6 credits). A study of critical methods.
Professor Gopnik

- **110-265D THEATRE LABORATORY.** (6 credits; *Prerequisite:* 110-230D, 267D and 269D, or permission of instructor).

110-266D MODERN THEATRE PRACTICE. (6 credits). Introduction to the technical and practical aspects of drama production.
Staff

110-267D VOICE AND SPEECH I. (6 credits; *Limited enrolment - permission of instructor required).* The voice in theory and practice; development of

practical oral skills.
Professor B. Anderson

- **110-268D HISTORY OF THE THEATRE I.** (L6credits).

110-269D FUNDAMENTALS OF DRAMA AND THEATRE. (6 credits; *Limited enrolment - permission of instructor required).* A practical and theoretical study of the individual and collective creative process and the actor's approach to it.
Staff

110-275D COMMUNICATIONS AND LITERATURE. (6 credits). An introduction to communication theory, through a study of its uses and implications in topics chosen from written literature, the theatre and film. (Not open to students who have taken 110-275A/110-276B).
Professor Ohlin

- **110-278D MASS MEDIA CRITICISM.** (6 credits).

110-279D INTRODUCTION TO THE FILM. (6 credits). An introductory study of the cinema as a medium.
Professor Livingston

- **110-295B SPECIAL TOPICS OF LITERARY STUDY.** (3 credits).
- **110-297D SPECIAL TOPICS OF LITERARY STUDY.** (6 credits).

300-LEVEL COURSES

- **110-301D THE DOCUMENTARY FILM.** (6 credits).

110-302A RESTORATION AND 18TH CENTURY ENGLISH LITERATURE I. (3 credits). A study of the major writers of the late 17th and earlier 18th centuries.
Professor Klima

110-303B RESTORATION AND 18TH CENTURY ENGLISH LITERATURE II. (3 credits). A study of the major writers of the later 18th century.
Professor Klima

110-304D THE ENGLISH NOVEL TO 1800. (6 credits). Special emphasis on the novel of the 18th century.
Professor Frye

- **110-306A MEDIEVAL AND TUDOR DRAMA.** (3 credits).

110-308A ELIZABETHAN DRAMA. (3 credits).
Professor Frye

110-309B JACOBEAN DRAMA. (3 credits).
Professor Shaw

110-310B RESTORATION AND 18TH CENTURY DRAMA. (3 credits).
Professor Shaw

110-312A VICTORIAN AND EDWARDIAN DRAMA I. (3 credits). (Not open to students who have taken 110-312D).
Professor Cecil

- **110-313B VICTORIAN AND EDWARDIAN DRAMA II.** (3 credits). (Not open to students who have taken 110-312D).
- **110-314B 20TH CENTURY DRAMA.** (3 credits).
- **110-315D SHAKESPEARE.** (6 credits; *Prerequisite:* 110-215A,B or consent of the instructor).

110-316A MILTON (3 credits).
Professor Bouchard

110-317B FICTION. (3 credits; limited to students in English Major programs; pre- or co-requisite: at least 3 credits of 110-200A/201B). A representative range of narratives in the context of some of the major critical questions that have been raised in discussing them. Instruction in writing critically about literature, and the basic elements of literary bibliography.
Staff

- **110-318A/B POETRY.** (3 credits; limited to students in English Major programs: Prerequisite: at least 3 credits of 110-200A/201B; 110-317A/B is either a pre- or a co-requisite).

110-319B DRAMA. (3 credits; limited to students in English Major programs; Prerequisite: at least 3 credits of 110-200A/201B: 110-317A/B is either a pre- or a co-requisite. Students may not take both this course and 110-230D). A representative range of drama in the context of some of the major questions raised by the nature of the theatrical medium.
Professor Cecil

- **110-320D THIRD WORLD LITERATURE.** (6 credits).

110-321A CARIBBEAN FICTION. (3 credits; Not open to students who have taken 110-322D).
Professor Elliott

110-323B 20TH CENTURY AMERICAN POETRY. (3 credits).
Professor Wees

- **110-324B 20TH CENTURY AMERICAN PROSE.** (3 credits).

110-325D MODERN NORTH AMERICAN FICTION. (6 credits).
Professor Dorsinville

110-327D THE DEVELOPMENTOF PROSE FICTIONIN CANADIAN LITERATURE. (6credits). A survey of Canadian fiction writers from the early 19th century to the present.
Professor Lucas

110-329D 20TH CENTURY CANADIAN LITERATURE. (6 credits).
Professor Darling

- **110-330D THE MODERN DRAMA.** (6 credits).
- **110-333D ENGLISH PROSE FROM BACON TO THE PRESENT.** (6 credits).
- **110-335D THE MODERN NOVEL.** (6 credits).

- **110-336D THE DEVELOPMENT OF THE NOVEL.** (6 credits). A survey of the evolution of the genre from its conception to the present.

- **110-337D THE ART OF POETRY.** (6 credits).

110-338B THE SHORT STORY. (3 credits). A study of significant trends in short story writing.
Professor Elliott

110-340A INTRODUCTION TO CHILDREN'S LITERATURE I. (3 credits). A survey of the development of children's literature. (Not open to students who have taken 110-343L).
Professor Reichertz

110-341B INTRODUCTION TO CHILDREN'S LITERATURE II. (3 credits; *Prerequisite:* English 110-340A). Aesthetic, sociological and psychological views of children's literature. (Not open to students who have taken 110-343L).
Professor Reichertz

110-342B SPECIAL TOPICS IN CHILDREN'S LITERATURE. (3 credits).
Professor Reichertz

- **110-344D LITERATURE AND SCIENCE.** (6 credits).

110-345D LITERATURE AND SOCIETY. (6 credits).
Mr. Booth

110-346D ART AND LITERATURE. (6 credits). A study of the relationship between literature and the visual arts.
Professor Davison

110-348D THE GREAT WRITINGS OF EUROPE. (6 credits). An analysis of works of the major writers of modern European literature in English translation.
Professor Robinson

110-351D ENGLISH LANGUAGE AND LITERATURE BEFORE THE NORMAN CONQUEST. (6 credits). An introduction to Old English (Anglo-Saxon) language and literature.
Professor Puhvel

- **110-352A AN INTRODUCTION TO OLD ENGLISH LANGUAGE AND LITERATURE.** (3 credits).

- **110-353B ANGLO-SAXON POETRY WITH EMPHASIS ON BEOWULF.** (3 credits).

- **110-356A MIDDLE ENGLISH.** (3 credits).

110-357A CHAUCER: CANTERBURY TALES. (3 credits). (Not open to students who have taken 110-355L).
Professor Piehler

110-358B CHAUCER: TROILUS AND CRISEYDE. (3 credits). (Not open to students who have taken 110-355L).
Professor Piehler

- **110-359B ENGLISH LITERATURE IN THE 14TH AND 15TH CENTURIES, EXCLUSIVE OF CHAUCER.** (3 credits).

110-360D LITERARY CRITICISM. (6 credits). An advanced study of critical methods.
Mr. Booth

- **110-362A WRITING ABOUT LITERATURE.** (3 credits).

110-363D CREATIVE WRITING – PROSE FICTION. (6 credits).
Professor Elliott

- **110-364D CREATIVE WRITING.** (6 credits).

110-365D THEATRE LAB. (6 credits). An exploration of a dramatic text through production. Corequisite courses are required.
Staff

110-366D AESTHETIC THEORIES OF DRAMA AND DRAMATIC CRITICISM. (6 credits). A theoretical study of drama and theatre as forms of human presentation.
Professor H. Anderson

- **110-368D HISTORY OF THE THEATRE II.** (6 credits).

- **110-369D PERIOD AND STYLE IN THE THEATRE.** (6 credits; *Prerequisites:* 110-267D, 269D, or permission of instructor). A study, through practical participation, of works from major periods in Western theatre.

110-378D CRITICAL APPROACHES TO COMMUNICATIONS STUDY. (6 credits). The development of methods for critical research in the media.
Professor Bristol

- **110-379D THE FILM.** (6 credits).

- **110-384D STUDIES IN COMMUNICATIONS.** (3 credits).

110-385D LITERATURE AND FILM. (6 credits). Word and image in Literature and Film. Includes a practical component.
Professor Wees

110-395A INDIVIDUAL READING COURSE. (3 credits; *Please note that this course is intended for advanced and/or specialized work based on an extensive background in departmental studies. This course is normally not available to students who are not Majors or Honours students in the department).* By arrangement with individual instructor. Permission must be obtained from the department before registration.
Staff

110-396B INDIVIDUAL READING COURSE. (3 credits; *Please note that this course is intended for advanced and/or specialized work based on an extensive background in departmental studies. This course is normally not available to students who are not Majors or Honours students in the department).* By arrangement with individual instructor. Permission must be obtained from the department before registration.
Staff

110-398D DEPARTMENTAL SEMINAR. (6 credits). The Canadian short story.
Professor Dorsinville

400-LEVEL COURSES

- **110-401D THE 17TH CENTURY.** (6 credits).
- **110-403D THE 18TH CENTURY.** (6 credits).
- **110-404A STUDIES IN NINETEENTH CENTURY LITERATURE I.** (3 credits). (Not open to students who have taken 110-405D).

110-405B STUDIES IN NINETEENTH CENTURY LITERATURE II. (3 credits). Wordsworth. (Not open to students who have taken 110-405D).
Professor Heppner

110-407A THE 20TH CENTURY. (3 credits). The poetry and criticism of T.S. Eliot.
Mr. Booth

110-408B THE 20TH CENTURY. (3 credits). Wallace Stevens.
Mr. Booth

110-414A STUDIES IN 20TH CENTURY LITERATURE I. (3 credits). Modern 20th Century British fiction. (Not open to students who have taken 110-418D).
Professor Lindeman

110-415B STUDIES IN 20TH CENTURY LITERATURE II. (3 credits). Modern 20th Century American fiction. (Not open to students who have taken 110-418D).
Professor Lindeman.

- **110-417A A MAJOR ENGLISH POET.** (3 credits). The poet studied varies from year to year. In 1982-83, Keats.
Professor Heuser

110-419A STUDIES IN 20TH CENTURY LITERATURE. (3 credits). Hemingway.
Professor Bouchard

- **110-420D STUDIES IN ANGLO-IRISH LITERATURE.** (6 credits).

110-421B AFRICAN LITERATURE. (3 credits; *Prerequisite:* one course in African Studies or permission of the instructor).
Professor Dorsinville

- **110-422A STUDIES IN 19TH CENTURY AMERICAN LITERATURE.** (3 credits)
- **110-423B STUDIES IN 19TH CENTURY AMERICAN LITERATURE.** (3 credits)
- **110-424B – ANGLO-IRISH LITERATURE.** (3 credits).

110-430B STUDIES IN DRAMA. (3 credits). For 1982-83, Modern Drama from Chekhov to the present.
Professor H. Anderson

- **110-431B STUDIES IN DRAMA.** (3 credits).
- **110-432D STUDIES IN DRAMA.** (6 credits).
- **110-433D STUDIES IN DRAMA.** (6 credits).
- **110-435D SATIRE.** (6 credits).

110-436D ESSAY WORKSHOP. (6 credits; *Limited to U2 and U3 B.A. students).* The course is intended for students who wish to perfect their command of prose composition; it is not a remedial course. (Maximum enrollment: 15).
Professor Malloch

110-437A STUDIES IN A LITERARY FORM. (3 credits). Study of a specific literary form, changing from year to year. In 1982-83, John Donne and his school.
Professor Conway

110-438B STUDIES IN A LITERARY FORM. (3 credits). Study of a specific literary form, changing from year to year. In 1982-83, allegory: Spenser's *The Faerie Queene.*
Professor Conway

- **110-439D STUDIES IN SCIENCE FICTION.** (6 credits).
- **110-443A CONTEMPORARY WOMEN'S FICTION.** (3 credits).
- **110-447D CROSSCURRENTS BETWEEN ENGLISH LITERATURE AND EUROPEAN LITERATURE OF THE 18TH CENTURY.** (6 credits; *Prerequisite:* a reading knowledge of French).
- **110-456A MIDDLE ENGLISH.** (3 credits).

110-464D CREATIVE WRITING – POETRY. (6 credits). Students must have the consent of the instructor.
Professor Reichertz

- **110-465D THEATRE LABORATORY.** (6 credits).

110-466D THEORY AND PRACTICE OF DRAMATIC PRODUCTION. (6 credits; *Prerequisites:* 110-230D, 269D and permission of instructor). Emphasis on directorial skills in the theatre.
Professor H. Anderson

110-469D DRAMA IN THE THEATRE. (6 credits). Conditions of performance in various modern modes, with exercises.
Professor B. Anderson

110-470D THEATRE FOR CHILDREN. (6 credits;*Prerequisites:* 110-269D or permission of instructor). A study of the historical development of children's theatre, as well as its theory and method.
Professor Russel

110-472D TELEVISION PRODUCTION TECHNIQUES. (6 credits; limited enrolment – permission of instructor required).
Professor Hillgartner

110-478D DEPARTMENTAL SEMINAR IN COMMUNICATIONS. (6 credits). A required departmental seminar in varying themes in communications for students in their final year of the Communica-

tions stream. Permission of instructor required.
Professor Finlay-Pelinski

110-480A STUDIES IN THE HISTORY OF THE FILM I. (3 credits). Specific subject varies from year to year. In 1982-83, the films & theories of Sergei Eisenstein.
Professor Wees

110-481B STUDIES IN THE HISTORY OF THE FILM II. (3 credits). Specific subject varies from year to year.
Staff

110-482D FILMMAKING. (6 credits; *Limited enrolment - permission of instructor required; prerequisite 110-275D or 110-279D).*
Staff

110-483A SEMINAR IN THE FILM. (3 credits). In-depth study of specific topics related to the film, which vary from year to year.
Staff

110-484B SEMINAR IN THE FILM. (3 credits).
Professor Livingston

- **110-485D MODES OF COMMUNICATION.** (6 credits).

- **110-486D STUDIES IN THE MASS MEDIA.** (6 credits).

110-487A SPECIAL TOPICS IN COMMUNICATIONS AND MASS MEDIA. (3 credits; *Prerequisites:* 110-275D and 110-378D or permission of the instructor). An advanced seminar in varying themes in communications for students in their final year of the Film and Communications program.
Professor Crowley

110-488B SPECIAL TOPICS IN COMMUNICATIONS AND MASS MEDIA. (3 credits; *Prerequisites:* 110-275D and 110-378D or permission of the instructor). An advanced seminar in varying themes in communications for students in their final year of the Film and Communications program.
Staff

110-491D HONOURS ESSAY. (6 credits).
Staff

110-495A INDIVIDUAL READING COURSE. (3 credits; *Please note that this course is intended for advanced and/or specialized work based on an extensive background in departmental studies. This course is normally not available to students who are not Majors or Honours students in the department).* By arrangement with individual instructor. Permission must be obtained from the department before registration.
Staff

110-496B INDIVIDUAL READING COURSE. (3 credits; *Please note that this course is intended for advanced and/or specialized work based on an extensive background in departmental studies. This course is normally not available to students who are not Majors or Honours students in the department).* By arrangement with individual instructor. Permission must be obtained from the department before registration.
Staff

110-498D DEPARTMENTAL SEMINAR. (6 credits). In 1982-83, the development of the novel 1885-1915.
Professor Weems

110-499B DEPARTMENTAL SEMINAR. (3 credits). In 1982-83, critical theory.
Professor Bouchard

500-LEVEL COURSES.

Advanced study in seminar format of special topics as indicated by course titles. Enrolment is limited to fifteen students. Admission by permission of the instructor.

110-500A MIDDLE ENGLISH. (3 credits).
Professor Conway

- **110-501B 16TH CENTURY.** (3 credits).

- **110-502A 17TH CENTURY.** (3 credits).

110-503A 18TH CENTURY. (3 credits). In 1982-83, William Blake.
Professor Heppner

110-504A 19TH CENTURY. (3 credits). In 1982-83, Byron.
Professor Cecil

- **110-505A 20TH CENTURY.** (3 credits).

110-516B SHAKESPEARE. (3 credits).
Professor Frye

- **110-525B AMERICAN LITERATURE.** (3 credits).

110-527A CANADIAN LITERATURE. (3 credits). A detailed study of a particular author, genre, period, or special group of Canadian writers. In 1982-83, Louis Dudek.
Professor Conway

110-528B CANADIAN LITERATURE. (3 credits). A detailed study of a particular author, genre, period, or special group of Canadian writers.
Staff

110-529D INTERDISCIPLINARY SEMINAR IN NORTH AMERICAN STUDIES. (3 credits).
Professor Riggs

110-530A LITERARY FORMS. (3 credits). In 1982-83, Jane Austen.
Professor Malloch

110-531A LITERARY FORMS. (3 credits). Literary history and literary theory.
Professor Weems

110-533B LITERARY MOVEMENTS. (3 credits). In 1982-83, Swift and his circle.
Professor Klima

- **110-539D THE FOLK BALLAD TRADITION IN GREAT BRITAIN AND NORTH AMERICA.** (6 credits).

- **110-555B OLD NORSE.** (3 credits).

110-560A ADVANCED PRACTICAL WORK IN THE THEATRE I. (3 credits).
Staff

110-561B ADVANCED PRACTICAL WORK IN THE THEATRE II. (3 credits).
Staff

- **110-565D MEDIEVAL DRAMA WORKSHOP.** (6 credits).
- **110-568D STUDIES IN THE DRAMATIC FORM.** (6 credits).

110-585D MODES OF COMMUNICATION IN MODERN LITERATURE AND MEDIA. (6 credits).
Professor McPherson

The following course(s) may be chosen by English Major and Honours students as part of their programs; for further details see relevant pages of this announcement.

135-351A STUDIES IN MODERN JEWISH FICTION. (3 credits).

135-363A THE SHTETL UPROOTED (1881-1924). (3 credits).

135-364B THE SHTETL UPROOTED (1924-1929). (3 credits).

157-360A QUÉBEC AND THE THIRD WORLD. (3 credits).

Attention is also drawn to the following courses: 132-325B Dante and the Middle Ages. 132-326A The Renaissance: Petrarch to Machiavelli.

ENGLISH AS A SECOND LANGUAGE (128)

Assistant Professor - B. SHEPPARD *(Director)*

Daytime classes are offered at the English and French Language Centre, 3438 McTavish St., 392-8242.

Students in any full-time program who are not native speakers of English may be eligible to register after taking a *Placement test.* Tests will be held at the Centre on Sept. 1st and 8th at 1 p.m., and Sept. 10th at 10 a.m.

Courses emphasize those skills required for university studies: understanding lectures, note-taking, reading texts, writing assignments. Remedial grammar and language laboratory practice as necessary. No auditors are accepted.
Note: Students in the Faculties of Arts and of Science may take these courses for credit, up to a maximum of 6 credits.

128-300A,B ENGLISH AS A SECOND LANGUAGE, INTERMEDIATE I. (3 credits).

128-301A,B ENGLISH AS A SECOND LANGUAGE, INTERMEDIATE II. (3 credits).

128-400A,B ENGLISH AS A SECOND LANGUAGE, ADVANCED I. (3 credits).

128-401A,B ENGLISH AS A SECOND LANGUAGE, ADVANCED II. (3 credits).

FRENCH AS A SECOND LANGUAGE (127)

Assistant Professor: B. SHEPPARD *(Director)*
Faculty Lecturers: J.Ph. AUBERT; C. FAY-BAULU; J. FLETCHER; M.N. LEGOUX; H. MIGNAULT; I. RIGAL; H. RIEL SALVATORE; G. SIX

English and French Language Centre
3438 McTavish St.,
Montreal, PQ, H3A 1X9.
Office: Room 202, Telephone: 392-5727.
Course 400D: 392-5716.
Courses 321D and 404D: 392-4938.

The English and French Language Centre offers French courses of a practical nature, for those who will be required to use the language in future, whether in Québec or elsewhere. Courses are open to students who do not yet feel at ease in the French-speaking community, cannot always follow conversation or lectures delivered in French at normal speed, without concession or simplification, and are unable to communicate their thoughts relatively easily and correctly in French. The Centre aims to bring students to the point where they can readily "function" in the French language. For more advanced courses, as well as courses in French linguistics, stylistics, literature, civilization, and in translation, see the Department of French Language and Literature.

ADMISSION AND REGISTRATION

An interview is required before admission to any course. When a student's level in French has been determined at the interview, a section ticket will be issued as proof of registration with the department.

Interviews and registration take place either: at 3438 McTavish, on Sept. 1st and 2nd, 10 a.m. to 12 noon and 2 p.m. to 4 p.m. or at the gymnasium during the registration period.

Limited Registration

As numbers are limited in all courses, students who meet the required standard for any given course are admitted on a first come, first served basis; thereafter, they are required to attend class without fail during the first two weeks, in order to retain their places.

Further tests will be given at the beginning of term to ensure that students are enrolled in an appropriate course. Where students' levels in French make admission to this department inappropriate, they will be directed to the Département de Langue et Littérature Françaises or Le Centre d'Études Canadiennes-Françaises.

No auditors are accepted.

Accelerated Sequence of Courses

Students who have achieved very good results in 127-201D, 127-205D or 127-211D may be considered for admission directly to 400D or 404D.

Attendance and Grades

Students are expected to attend regularly in all courses. Grades are awarded on the basis of term work, regular tests and an oral examination.

Course Descriptions

- *Denotes not offered 1982-83.*

127-201D BEGINNERS' FRENCH. (6 credits; 3 hours, plus language laboratory). Open to students in any degree program having no previous knowledge of French. (Not open to students who have taken or are taking 127-205D). Interview required.
Mr. Aubert and Ms. Fletcher

- **127-203D INTENSIVE BEGINNERS' FRENCH.** (9 credits, 6 hours plus language laboratory).

127-205D ELEMENTARY FRENCH. (6 credits. 3 hours, plus language laboratory; Prerequisite: up to 1 semester of beginners' French). For students who, though they are not beginners, have not studied sufficient French to be admitted to the second level (211D). Rapid review of basic structures and vocabulary. (Not open to students who are taking or have taken 127-201D). Interview required.
Mr. Six

127-211D ORAL AND WRITTEN FRENCH I. (6 credits; 3 hours, plus language laboratory). Open to students in any degree program having only an elementary knowledge of French. Grammar review, comprehension, vocabulary, conversation. Interview required.
Professor Sheppard and Mrs. Fay-Baulu

127-302A INTERMEDIATE FRENCH: LISTENING COMPREHENSION AND ORAL EXPRESSION I. (3 credits. Partly modular. Class meeting 1½ hours per week). For those who have developed written skills much more than aural/oral skills, who have difficulty in understanding spoken French and therefore cannot communicate effectively. Students complete 4 modules during the semester and most of their study time is spent in the Language Laboratory. Drop-in Centre. Interview required.
Ms. Legoux

127-303B INTERMEDIATE FRENCH: LISTENING COMPREHENSION AND ORAL EXPRESSION II. (3 credits. Partly modular. Class meeting 1½ hours per week). Continuation of 302A. Students complete four more modules. Interview required.
Ms. Legoux

127-321D ORAL AND WRITTEN FRENCH II. (6 credits; 3 hours, plus language laboratory). For those having taken 127-211D or equivalent. Comprehension, reading, oral exposés, discussion, grammar review. (Not open to students who have taken 127-221D). Interview required.
Ms. Aubert, Ms. Legoux, and Ms. Rigal

127-322A,B ORAL AND WRITTEN FRENCH II. (3 credits; 3 hours, plus language laboratory). Equivalent to the first half of 127-321D. Interview required.

- **127-323A,B ORAL AND WRITTEN FRENCH II.** (3 credits; 3 hours, plus language laboratory). Equivalent to the second half of 127-321D. Interview required.

127-332A,B, INTERMEDIATE FRENCH: GRAMMAR. (3 credits. Partly modular). For those who have reached a good level of competence in oral expression and comprehension but whose understanding of grammar is very limited. One class meeting per week. Students complete 5 modules. Language laboratory practice and drop-in centre. Interview required.
Ms. Mignault

127-333A,B INTERMEDIATE FRENCH: GRAMMAR. (3 credits; Partly modular). Continuation of 127-332A,B. Students complete 5 modules.
Ms. Mignault

Classes in Functional French (400, 402, 403, 404)

Please note the following:

1) It is impossible in any language course, in only a few class meetings per week, to offer sufficient oral practice. Our aim is to provide students with the means and the confidence to practise their French outside class. Students are advised to take full advantage of all the opportunities offered by the Québec milieu (contacts with French-speaking persons, at work and in leisure, theatre, the written word, etc.) and are required to work on projects demonstrating their activities in this field.
2) Regular written work (brief résumés) is required, always with a view to reinforcing what has been learned orally. Frequent short tests will be given.
3) Any student who enrols must be prepared to take an active part in class meetings; this involves participation and leadership in discussions as well as organization of the program.
4) Students who have taken 400D may not enrol in 404D. Graduate Students will be admitted by special permission only and where numbers allow.
5) Attendance is compulsory.

127-400D FRANÇAIS FONCTIONNEL. (6 crédits, 3 heures par semaine). 16 étudiants par section. Discussions sur des sujets d'actualité à partir de

journaux, films, enregistrements. Révision de structures de langue et de points de grammaire. (Not open to students who have taken 127-341D). Interview required.
Ms. Mignault, Ms. Riel-Salvatore et Ms. Rigal

127-402A,B FRANÇAIS FONCTIONNEL. (3 crédits. 3 heures par semaine). Première moitié du programme du cours 400D.

- **127-403A,B FRANÇAIS FONCTIONNEL.** (3 crédits. 3 heures par semaine). Deuxième moitié du programme du cours 400D.

127-404D FRANÇAIS FONCTIONNEL INTENSIF. (6 crédits; 5 heures par semaine réparties sur 4 jours). Cours intensif centré sur la langue parlée; groupes de 10 étudiants. Permet à ceux qui ont déjà les connaissances de base du français d'améliorer leur compréhension et leur expression par la pratique. Activités extra- curriculaires faisant partie du programme. Test de classement et entrevue.
Ms. Fay-Baulu et Mr. Six.

127-405A,B FRANÇAIS FONCTIONNEL, OPTION ÉCRIT I. (3 credits). For students whose oral French is of a good standard but whose written French is noticeably inferior. Written assignments designed to develop vocabulary and correct expression on a functional level. Use of dictionaries and reference materials. Interview and placement test before registration.
Ms. Fletcher

127-406B FRANÇAIS FONCTIONNEL, OPTION ÉCRIT II. (3 credits). Similar to 405A, on a more advanced level. (This course aims to help students reach the standard required for "Composition I", 125-200D, in the Department of French Language and Literature.) Interview and placement test before registration.
Ms. Fletcher

FRENCH LANGUAGE AND LITERATURE (125)

Professors – M. ANGENOT; M. CARTWRIGHT; G. DI STEFANO; J. ÉTHIER-BLAIS; E. KUSHNER; L. van DELFT: J.C. MORISOT
Associate Professors – J.-P. BOUCHER; Y. CHAMPIGNEUL; I. CREMONA; J.-P. DUQUETTE: H. JONES; A. MAUGEY; R.G. McGILLIVRAY *(Chairman);* G. PASCAL; M. RABOTIN; F. RICARD: Y. RIVARD; A. SMITH; J. TERRASSE: A. TICHOUX;
Assistant Professor – I. STAROSTA
Faculty Lecturer – J.-C. LEMYZE

Pavillon Peterson
3460, rue McTavish
Montréal H3A 1X9

Secrétariat Général – Tél.: 392-4577
Études de 1er cycle – Pavillon Peterson, Bureau 102 Tél.: 392-4670 ou 4671.

GÉNÉRALITÉS

Le département de français offre un programme de cours qui couvre l'ensemble des littératures française et québécoise ainsi que d'autres aspects des études françaises: cinéma, civilisation, et surtout langue (linguistique, stylistique, traduction).

Une nouvelle option de Concentration ("Major") est offerte en "Stylistique et traduction". Il ne s'agit pas d'un programme de préparation technique à la profession de traducteur mais plutôt d'un B.A. en français permettant d'acquérir un haut niveau de compétence linguistique et de culture générale ainsi que la connaissance des mécanismes de base de la traduction à partir de l'anglais. Pour tous détails concernant ce programme, se renseigner auprès du Département.

Le français est la seule langue de travail à l'intérieur du Département. Les francophones constituent une proportion importante des étudiants, ce qui représente un avantage appréciable pour les étudiants qui ne sont pas de langue française, leur permettant de faire leurs études dans un milieu essentiellement français.

La plupart des cours peuvent être suivis par tout étudiant ayant les connaissances et les capacités voulues; le professeur chargé du cours jugera en dernier ressort. Il existe toutefois quelques restrictions:

1. l'admission aux cours pratiques de langue (Composition I à V, Français commercial, Traduction) dépend d'un examen d'entrée obligatoire dont les dates seront communiquées au moment des inscriptions. L'examen a pour but de déterminer le niveau de connaissance de l'étudiant et d'assurer que celui-ci sera dirigé vers une classe correspondant à ses besoins. Si la préparation de l'étudiant s'avère insuffisante pour pouvoir lui permettre de suivre un cours au Département et ne peuvent donc pas faire partie d'un programme de Concentration ("Major") ou de Spécialisation ("Honours").
2. Les étudiants extérieurs au Département peuvent s'inscrire à tous les cours offerts au Département à l'exclusion des cours des séries 90 (290, 390 etc. . .) réservés aux étudiants du Département.
3. Avant de s'inscrire dans des cours de U3 (série 400-500) les étudiants de U1 doivent obtenir préalablement la permission du professeur.

Les étudiants désirant se spécialiser en français sont invités à se procurer au Département le "Guide des études de 1er cycle" qui leur donnera de nombreux renseignements supplémentaires.

ASSOCIATION GÉNÉRALE DES ÉTUDIANTS DE LANGUE ET LITTÉRATURE FRANÇAISES (AGELF)

Association regroupant les étudiants de 1er cycle (inscrits à au moins 6 crédits en français) qui a pour but de promouvoir les intérêts de tous ses membres. (Pour plus de renseignements consulter le guide du Département).

PROGRAMME DE CONCENTRATION (''MAJOR'')

C'est le programme auquel les étudiants s'inscrivent normalement en 1ère année (U1). Les étudiants peuvent choisir entre les options suivantes, elles comportent chacune un certain nombre de cours obligatoires indiqués ci-dessous:

Concentration, option littérature française (48 crédits*).

U1: Composition III, IV ou V (6 crédits); 125-290A; 125-295B; 125-291A; 125-296B.
U2 et U3: 125-230B; 15 crédits en littérature française; 12 crédits au Département.

Concentration, option littérature française et québécoise (48 crédits*).

U1: Composition III, IV ou V (6 crédits); 125-290A; 125-295B; 125-291A; 125-296B.
U2 et U3: 125-230B; 12 crédits en littérature française; 12 crédits en littérature québécoise; 3 crédits au Département.

Concentration, option littérature québécoise (48 crédits*).

U1: Composition III, IV ou V (6 crédits); 125-290A; 125-295B; 125-291A; 125-296B.
U2 et U3: 125-230B; 15 crédits en littérature québécoise; 12 crédits au Département.

* Si aucun des cours complémentaires choisis par l'étudiant n'est dans le domaine des Humanités, l'exigence en français est portée à 54 crédits.

Concentration, option stylistique et traduction (54 crédits).

U1: Composition V (6 crédits); 125-290A; 125-295B; 125-345A; 125-346B; 12 crédits complémentaires.
U2: 125-340D; 125-445A; 125-446B; Ling. 104-200A; 125-230B; 12 crédits complémentaires.
U3 125-457A; 125-510B; 125-520A; 125-332A ou 333B; 125-300A ou B; 125-400B ou 125-435B ou 125-347A; 12 crédits complémentaires.

PROGRAMME DE SPÉCIALISATION (''HONOURS'') ET DE DOUBLE SPÉCIALISATION (''JOINT HONOURS'').

L'obtention d'un baccalauréat avec Spécialisation ou Double Spécialisation est obligatoire pour l'admission dans les programmes de 2ème et 3ème cycles (maîtrise et doctorat).

L'admission en Spécialisation se fait habituellement en deuxième année selon les résultats de la première année. Une fois admis, les étudiants doivent obtenir au moins une note B dans tous leurs cours de français.

Les matières qui peuvent s'ajouter au français dans les programmes de Double Spécialisation sont les suivantes: Allemand, Anglais, Espagnol, Histoire, Italien, Langues Anciennes, Philosophie, Russe. D'autres peuvent être envisagées. Se renseigner auprès du Département.

Les étudiants peuvent choisir entre les options suivantes comportant chacune un certain nombre de cours obligatoires indiqués ci-dessous:

Spécialisation, option littérature française (60 crédits*).

U1: Composition V (6 crédits), 125-290A; 125-295B; 125-291A; 125-296B.
U2 et U3: 125-230B; 125-390D; 3 crédits dans cinq des six périodes de la littérature française; 125-491A ou 492B; 125-590A ou 591B; 12 crédits au Département.

Spécialisation, option littérature française et québécoise (60 crédits*).

U1: Composition V (6 crédits); 125-290A; 125-295B; 125-291A; 125-296B.
U2 et U3: 125-230B; 125-390D; 3 crédits dans cinq des six périodes de la littérature française; 125-491A ou 492B; 125-495A ou 496B; 125-590A ou 591B; 12 crédits en littérature québécoise.

Spécialisation, option littérature québécoise (60 crédits*).

U1: Composition V (6 crédits); 125-290A; 125-295B; 125-291A; 125-296B.
U2 et U3: 125-230B; 125-390D; 125-495A ou

496B; 125-590A ou 591B; 15 crédits en littérature québécoise; 12 crédits au Département.

* Au moins 9 crédits des cours complémentaires doivent être obtenus dans un autre Département.

Double spécialisation, option littérature française (36 crédits).

U1: 125-290A; 125-295B; 125-291A; 125-296B.
U2 et U3: Composition IV ou V (6 crédits); 3 crédits dans cinq des six périodes de la littérature française; 125-491A ou 125-492B ou 125-590A ou 125-591B.

Double spécialisation, option littérature québécoise (36 crédits).

U1: 125-290A; 125-295B; 125-291A; 125-296B.
U2 et U3: Composition IV ou V (6 crédits); 125-495A ou 125-496B ou 125-590A ou 125-591B; 15 crédits en littérature québécoise.

DESCRIPTION SOMMAIRE DES COURS

- *Indique qu'un cours ne sera pas donné en 1982-1983.*

N.B. Une description plus complète, comportant les listes de lecture, peut être consultée au Département.

125-200D COMPOSITION I. (6 crédits; Prérequis: examen d'entrée). Révision grammaticale et enrichissement des moyens d'expression par la composition et l'étude de textes littéraires. Travaux écrits hebdomadaires.
Professeur Lemyze

125-201D COMPOSITION II. (6 crédits; Prérequis: examen d'entrée). Cours analogue au cours précédent, pour étudiants plus avancés.

Note: Il n'est pas permis de suivre successivement les cours 200D et 201D. L'étudiant qui, ayant suivi l'un ou l'autre cours, est désireux de s'inscrire à un cours de composition plus avancé, passera au cours de Composition III.

125-202D INTRODUCTION À LA LITTÉRATURE FRANÇAISE. (6 crédits). Initiation à la littérature française par une étude des principaux textes. (Les étudiants qui suivent ou ont suivi le cours 207D ne seront pas admis).
Professeur Starosta

125-203D THÉÂTRE EN ACTION. (6 crédits). Ce cours est réservé aux étudiants non francophones qui désirent perfectionner leur français parlé en montant et en interprétant une ou plusieurs pièces modernes. (Les étudiants qui suivent ou ont suivi les cours 125-206, 125-256B ou 125-352D ne seront pas admis).

125-204A CIVILISATION QUÉBÉCOISE I. (3 crédits). Introduction à la civilisation québécoise (de 1800 à 1945). À l'aide d'oeuvres littéraires et artistiques, introduction aux différents aspects de la société québécoise.
Professeur Maugey

125-205B CIVILISATION QUÉBÉCOISE II. (3 crédits). Introduction à la civilisation québécoise (depuis 1945). Suite du cours précédent.

125-206A L'ART D'ÊTRE SPECTATEUR I – THÉÂTRE. (3 crédits). Ce cours est réservé aux étudiants non francophones. Un examen d'entrée sera administré aux début du cours. Après avoir étudié le texte de quelques pièces de répertoire, les étudiants se pencheront sur les problèmes de la réalisation, puis assisteront à une représentation pour en faire le compte rendu critique. (Les étudiants qui suivent ou ont suivi les cours 125-203D, 125-256B ou 125-352D ne seront pas admis).

- **125-207D LE FRANÇAIS PAR LES TEXTES.** (6crédits). Cours de langue et de littérature. Initiation à la littérature par la lecture de textes français et québécois. Exercices de langue (composition; révision de grammaire. (Les étudiants qui suivent ou ont suivi le cours 202D ne seront pas admis).

- **125-208A LITTÉRATURE QUÉBÉCOISE CONTEMPORAINE I (1945-1960).** (3 crédits). Introduction à la littérature québécoise d'après-guerre.

- **125-209B LITTÉRATURE QUÉBÉCOISE CONTEMPORAINE II (1960 À NOS JOURS).** (3 crédits). Suite du cours précédent.

125-210B L'ART D'ÊTRE SPECTATEUR – CINÉMA. (3 crédits). Étude du texte des commentaires ou des dialogues des films présentés. Nombreux exercices écrits et discussions visant à développer une plus grande maîtrise de la langue.

125-211A,B TRADUCTION ÉLÉMENTAIRE. (3 crédits). À partir de textes de difficulté moyenne, ce cours visera à établir les bases d'une bonne traduction: fidélité au texte et correction de la forme dans la langue d'arrivée, le français. Ce dernier objectif implique une révision pratique de la grammaire. Cours réservé aux étudiants non francophones.
M. Lemyze

125-220A LA FRANCE D'AUJOURD'HUI (DEPUIS 1945) I. (3 crédits). Histoire politique, sociale et économique de la France depuis 1940.
Professeur Maugey

125-221B LA FRANCE D'AUJOURD'HUI (DEPUIS 1945) II. (3 crédits; Prérequis: 125-220A ou permission du professeur). Dossiers d'étude sur la

France actuelle: Institutions, vie sociale, économie, culture.
Professeur Maugey

125-230B INTRODUCTION À LA LINGUISTIQUE FRANÇAISE. (3 crédits; Prérequis: Linguistics 104-200A ou permission du professeur). Survol de la linguistique française de F. de Saussure à nos jours. Description linguistique du français moderne (éléments de phonologie, de phonétique normative, de syntaxe et de morphologie).
Professeur Terrasse

125-235D ÉVOLUTION ET STRUCTURES DE LA LANGUE FRANÇAISE. (6 crédits). Histoire de la langue française, du bas-latin à la langue moderne. Étude de l'évolution phonétique, syntaxique, sémantique. Étude de textes des différentes époques.
Professeur Rabotin

125-243A COMPOSITION III: REDACTION (3 crédits; Prérequis: test ou Composition I ou II). Enrichissement de la langue; délimitation des faits d'expression; étude systématique des ressources expressives du français. Rédactions. Les étudiants qui suivent ou ont suivi le cours de Composition IV ou V ne seront pas admis.

125-244B COMPOSITION III: RÉDACTION. (3 crédits; Prérequis: 125-243A ou test). Deuxième partie du cours précédent. Les étudiants qui suivent ou ont suivi les cours de Composition IV ou V ne seront pas admis.

125-247A COMPOSITION IV: DISSERTATION. (3 crédits; Prérequis: test ou Composition III). Les étudiants qui suivent ou ont suivi le cours de Composition V ne seront pas admis. Apprentissage de la dissertation.

125-248B COMPOSITION IV: DISSERTATION. (3 crédits; Prérequis: 125-247A, test ou Composition III). Deuxième partie du cours de Composition IV (voir 125-247A). Les étudiants qui suivent ou ont suivi le cours de Composition V ne seront pas admis.

125-249B PHONÉTIQUE CORRECTIVE. (3 crédits). Destiné aux non francophones, ce cours a pour but d'améliorer leur prononciation. Étude systématique des phonèmes du français et de leur production. Rythme et intonation de la phrase. Recommandé aux étudiants non francophones inscrits au Département de français. D'autres étudiants seront admis selon la disponibilité des places.
M. Lemyze

125-252A COMPOSITION V: STYLISTIQUE. (3 crédits; Prérequis: test ou Composition IV). Première partie du cours de Composition V. Cours de composition avancée: initiation à la stylistique du français: éléments intellectuels et affectifs, niveaux de langage, rédactions.
Professeur Terrasse

125-253B COMPOSITION V: STYLISTIQUE. (3 crédits; Prérequis: 125-252A, test ou Composition IV). Deuxième partie du cours de Composition V. (voir 125-252A).
Professeur Terrasse

125-256B L'ART D'ÊTRE SPECTATEUR II. (3 crédits). Après avoir étudié le texte de quelques pièces de répertoire, les étudiants se pencheront sur les problèmes de la réalisation, puis assisteront à une représentation pour en faire le compte rendu critique. Les étudiants qui suivent ou ont suivi les cours 125-203D, 206A ou 125-352D ne seront pas admis.

125-290A HISTOIRE DE LA LITTÉRATURE FRANÇAISE. (3 crédits). Séminaire obligatoire pour tous les étudiants en littérature française ou québécoise. Il a pour but d'assurer que nos étudiants, de provenances diverses, possèdent les connaissances de base essentielles pour poursuivre des études plus avancées. (Les étudiants qui ont suivi le cours 125-290D ne seront pas admis).
Professeur Cremona

125-291A TRAVAUX PRATIQUES I. (3 crédits). À suivre conjointement avec le 125-290A. Étude détaillée de textes portant sur la littérature française du Moyen Age à la fin du 18e siècle. (Les étudiants qui ont suivi le cours 125-291D ne seront pas admis).
Professeur Cremona

125-295B HISTOIRE DE LA LITTÉRATURE FRANÇAISE ET QUÉBÉCOISE. (3 crédits). Introduction à la littérature française et québécoise du 19e et 20e siècles. (Les étudiants qui ont suivi le cours 125-290D ne seront pas admis).
Professeur Kushner

125-296B TRAVAUX PRATIQUES II. (3 crédits). À suivre conjointement avec le 125-295B. Études détaillée de textes portant sur la littérature française et québécoise du 19e et 20e siècles. (Les étudiants qui ont suivi le cours 125-291D ne seront pas admis).
Professeur Kushner

125-300A,B FRANÇAIS COMMERCIAL. (3 crédits; Prérequis: 125-200D ou 201D, examen d'entrée ou autorisation du professeur). Ce cours porte sur la langue des affaires parlée et écrite au Québec. Exercices oraux et écrits: acquisition de vocabulaire, terminologie générale; rédaction de lettres et de rapports; étude de structures grammaticales trouvées principalement dans des documents commerciaux. Cours réservé aux étudiants de la Faculté d'administration des affaires et aux étudiants en Relations Industrielles et en "organizational Psychology" de la Faculté des Arts. Les autres étudiants de la Faculté des Arts doivent obtenir l'autorisation de leur vice-doyen.

125-310A HISTOIRE DU CINÉMA FRANÇAIS I. (3 crédits). Rétrospective du cinéma français depuis

ses origines jusqu'à la Deuxième Guerre mondiale.
Professeur Maugey

125-311B HISTOIRE DU CINÉMA FRANÇAIS II. (3 crédits; Prérequis: 125-310A ou permission du professeur). Suite du cours précédent: le cinéma français d'après-guerre.
Professor Maugey

125-315A LE CINÉMA QUÉBÉCOIS. (3 crédits). Étude thématique du cinéma québécois à travers ses principaux films. Les approches seront: poétique, sociologique, psychologique et politique.

125-320A CIVILISATION FRANÇAISE DU MOYEN ÂGE ET DE LA RENAISSANCE. (3 crédits). Ce cours a pour but de faire connaître, au moyen de documents divers (textes, diapositives, etc.) le milieu humain dans lequel la littérature française s'est développée entre 1100 et 1600.
Professeur Tichoux

125-321B CIVILISATION FRANÇAISE: L'ANCIEN RÉGIME. (3 crédits). Ce cours a pour but de faire connaître, au moyen de documents divers (textes, diapositives, etc.) le milieu humain dans lequel la littérature française s'est développée depuis Henri IV jusquà la Révolution.

125-328D HISTOIRE DE LA CIVILISATION QUÉBÉCOISE. (6 crédits). Étude des différents secteurs de la société québécoise (économique, politique, social, culturel) depuis les débuts de la colonie jusqu'à l'époque contemporaine. La matière sera divisée en neuf périodes historiques et pour chacune on fera appel aux études et aux textes les plus susceptibles d'éclairer la vie de l'époque. (Les étudiants qui suivent ou ont suivi les cours 125-204A ou 125-205B ne seront pas admis).
Professeur Boucher

125-330D INITIATION À L'ANALYSE LINGUISTIQUE DES TEXTES LITTÉRAIRES. (6 crédits). Méthodologie de l'analyse linguistique des textes littéraires. Théorie des figures et des tropes. Rhétorique. Prosodie. Introduction à la théorie des genres littéraires, à la sémiotique et à l'analyse du discours.
Professeur Angenot

125-332 SYNTAXE ET MORPHOLOGIE. (3 crédits; Prérequis: 125-230B ou permission du professeur). Exposé des méthodes et des solutions proposées par différentes théories linguistiques (structuraliste, distributionnelle, grammaire générative, grammaire applicative ...) suivi d'application à un ou quelques problèmes de morpho-syntaxe du français.

125-333A SÉMANTIQUE ET LEXICOLOGIE. (3 crédits). Théories contemporaines de sémantique et de lexicologie. Notions de lexicographie. Changements sémantiques, idiotismes, néologismes, etc.
Professeur Di Stefano

125-340D GRAMMAIRE AVANCÉE. (6 crédits). Cours destiné aux étudiants ayant suivi les cours de Composition IV Ou V ou en ayant été dispensés: grammaire historique. Examen des aspects évolutifs de la grammaire française moderne. Application à l'interprétation stylistique des textes.

125-341A TECHNIQUES D'ÉCRITURE. (3 crédits). Étude des techniques de composition des textes littéraires. Le portrait, la description, la répétition, l'opposition, le dédoublement, les dialogues, etc. A partir d'exercices pratiques, ce cours vise à comprendre comment est fabriqué un texte de fiction.
Professeur Pascal

125-345A TRADUCTION I. (3 crédits). Exercices portant sur les éléments syntaxiques et lexicaux qui présentent des problèmes de traduction simples mais fréquents. Traduction de textes variés. Admission sur examen préalable (date disponible au moment des inscriptions). Les étudiants qui ont suivi le cours 125-345D ne seront pas admis.
Professeur Tichoux

125-346B TRADUCTION II. (3 crédits; Prérequis: 125-345A ou examen). Stylistique comparée du français et de l'anglais; étude des procédés de traduction jusqu'à la modulation. Les étudiants qui ont suivi le cours 125-345D ne seront pas admis.

125-347B TERMINOLOGIE GÉNÉRALE. (3 crédits). Étude empirique des différents stades dans le travail du terminologue: collection des données, production des fiches terminologiques, recherches ponctuelles et thématiques. Les problèmes terminologiques de la traduction constitueront la base des recherches de ce cours. Étude des problèmes pratiques posés par la terminologie bilingue ou multilingue et ses répercussions dans un domaine particulier des connaissances humaines.

125-350A LITTÉRATURE FRANÇAISE DU XXe SIÈCLE I. (3 crédits). Introduction à la littérature française moderne par une étude de quelques oeuvres parmi les plus marquantes.
Professeur Starosta

125-351B LITTÉRATURE FRANÇAISE DU XXe SIÈCLE II. (3 crédits; Prérequis: 125-350A ou permission du professeur). Suite du cours précédent.
Professeur Starosta

- **125-352D DU LIVRE À LA SCÈNE.** (6 crédits; Effectifs limités à 15 étudiants). Ce cours comprend un aspect pratique (interprétation, mise en scène) et un aspect théorique constitué d'une réflexion sur les conditions et les principes auxquels se soumet l'auteur de théâtre dans l'exercice de son art. (Les étudiants qui suivent ou ont suivi les cours 125-203D, 206A ou 256B ne seront pas admis).

125-355A LE ROMAN DE PROUST À CAMUS. (6 crédits). Le roman en France depuis le début du XXe siècle jusqu'à la deuxième Guerre Mondiale.
Professeur Smith

125-356A RÉALISME ET NATURALISME. (3 crédits). L'esthétique réaliste et son évolution de Stendhal à Flaubert. Conception naturaliste du roman de Fromentin à Maupassant.
Professeur Jones

125-358B LE ROMAN DEPUIS SARTRE. (3 crédits). Le roman d'après-guerre; le "nouveau roman". Techniques de composition; relations entre l'univers imaginaire des romanciers et leur époque.
Professeur Smith

125-360A LE ROMANTISME I: THÉÂTRE ET POÉSIE. (3 crédits). Étude du drame romantique à travers les écrits théoriques et les oeuvres majeures. Dans un contexte historique et social, étude du développement d'une sensibilité et d'une thématique nouvelles en poésie. (Les étudiants qui ont suivi le cours 125-360D ne seront pas admis).
Professeur Pascal

125-361B LE ROMANTISME II: LE ROMAN. (3 crédits). Illustration à l'aide d'oeuvres caractéristiques choisies chez les auteurs majeurs, des différentes tendances qui se manifestent à l'intérieur du "genre" romanesque (roman personnel, historique etc. . .) (Les étudiants qui ont suivi le cours 125-360D ne seront pas admis).
Professeur Pascal

125-362A LA LITTÉRATURE DU XVIIe SIÈCLE I. (3 crédits). La littérature de l'âge baroque en France.

125-363B LA LITTÉRATURE DU XVIIe SIÈCLE II (126-237B). (3 crédits; Prérequis: 125-362A ou permission du professeur). La littérature de l'époque classique.

125-364A LA LITTÉRATURE DU XVIIIe SIÈCLE I. (3 crédits). Introduction aux grands courants d'idées du siècle. Évolution de la sensibilité dans le roman et le théâtre; mouvement philosophique.
Professeur Cartwright

125-365B LA LITTÉRATURE DU XVIIIe SIÈCLE II. (3 crédits; Prérequis: 125-364A ou permission du professeur). Étude des courants d'idées et du développement de la sensibilité en France après 1750.
Professeur Terrasse

125-366A LA LITTÉRATURE DE LA RENAISSANCE: DE MAROT À RABELAIS ET MARGUERITE DE NAVARRE. (3 crédits). La Renaissance des lettres d'après les oeuvres les plus représentatives du premier Humanisme français. Les étudiants qui ont suivi le cours 125-361D ne seront pas admis.
Professeur Cremona

125-367B LA LITTÉRATURE DE LA RENAISSANCE: DE RONSARD À MONTAIGNE. (3 crédits; Prérequis: 125-366A ou permission du professeur). Évolution de la pensée humaniste et guerres de religion, d'après l'étude des textes. Les étudiants qui ont suivi le cours 125-361D ne seront pas admis.
Professeur Kushner

125-368A LA LITTÉRATURE NOIRE D'EXPRESSION FRANÇAISE. (3 crédits). Origine particulière de la littérature antillaise en africaine. Ce cours portera sur le mouvement de la négritude et sur ses chantres.
Professeur Maugey

125-370A LA LITTÉRATURE QUÉBÉCOISE JUSQU'EN 1940. (3 crédits). Ce cours proposera l'étude des oeuvres les plus significatives de la littérature québécoise afin d'en dégager les principales tendances depuis François-Xavier Garneau (1840) jusqu'à Saint-Denys Garneau (1940).
Professeur Rivard

125-371B LA LITTÉRATURE QUÉBÉCOISE DEPUIS 1940. (3 crédits; Prérequis: 125-370A ou permission du professeur). Ce cours proposera l'étude des oeuvres les plus significatives de la littérature québécoise afin d'en dégager les principales tendances, depuis Alain Grandbois (1940) jusqu'à nos jours.
Professeur Rivard

125-372A LE ROMAN QUÉBÉCOIS JUSQU'EN 1945. (3 crédits). Naissance du roman d'aventure et du récit fantastique; étude de moeurs et romans de la terre, évolution du roman paysan.
Professeur Ethier-Blais

125-373B LE ROMAN QUÉBÉCOIS (1945-1960). (3 crédits). La Seconde Guerre mondiale: éclatement des valeurs traditionnelles. Découverte de la modernité et recherche de nouvelles formes. L'étude portera sur quelques oeuvres majeures de cette période.
Professeur Ethier-Blais

125-375D THÉÂTRE QUÉBÉCOIS. (6 crédits.) Survol de l'activité théâtrale au Canada français des origines à 1945. Étude des pièces les plus représentatives du théâtre québécois depuis 1945. L'objectif du cours est de montrer dans quelle mesure notre théâtre est marqué par les problèmes sociaux et politiques du Québec.
Professeur Smith

- **125-377A LA CRITIQUE LITTÉRAIRE QUÉBÉCOISE.** (3 crédits). Histoire des doctrines littéraires et de la pensée critique au Québec depuis 1860. Problèmes principaux: existence de la littérature québécoise, rapports avec l'étranger, etc. Tendances de la critique actuelle universitaire et journalistique. Étude de quelques textes majeurs.

- **125-378A LE CONTE QUÉBÉCOIS.** (3 crédits). La tradition orale: contes et légendes traditionnels. Passage de l'oral à l'écrit. Développement du conte littéraire depuis la fin du 19e siècle jusqu'à

nos jours. Étude des principaux thèmes, des principales formes, et de quelques oeuvres majeures.

125-382A LE ROMAN QUÉBÉCOIS DEPUIS 1960 I. (3 crédits). Analyse de la forme romanesque: techniques de représentation, de construction et d'expression. (Les étudiants qui ont suivi le cours 125-382D ne seront pas admis).
Professeur Boucher

125-383B LE ROMAN QUÉBÉCOIS DEPUIS 1960 II. (3 crédits; Prérequis: 125-382A ou permission du professeur). Étude sociale et historique de plusieurs des meilleurs romans québécois contemporaines. (Les étudiants qui ont suivi le cours 125-382D ne seront pas admis).
Professeur Boucher

125-390D HISTOIRE DES DOCTRINES LITTÉRAIRES DE LA RENAISSANCE À NOS JOURS. (6 crédits). La réflexion littéraire (mouvements et doctrines) depuis ses débuts au XVIe siècle jusqu'à l'époque contemporaine. Étude des principaux écrits théoriques par lesquels les écrivains ont tenté de définir leurs rapports avec la littérature et avec la société.
Professeur Morisot

125-400B FRANÇAIS COMMERCIAL AVANCÉ. (3 crédits; Prérequis: 125-300A ou 300B ou test de classement). Étude en profondeur de la terminologie utilisée dans des domaines très spécifiques des affaires: le marketing, les banques, les assurances, le droit commercial, la bourse, etc. Cours réservé aux étudiants de la Faculté d'administration des affaires et aux étudiants en Relations Industrielles et en "Organizational Psychology" de la Faculté des Arts. Les autres étudiants de la Faculté des Arts doivent obtenir l'autorisation de leur vice-doyen.

- **125-410A LITTÉRATURE ET CINÉMA: DU ROMAN À L'ÉCRAN.** (3 crédits). Transposition cinématographique de quelques oeuvres littéraires. Les étudiants prépareront à l'intérieur de groupes de travail un projet d'adaptation de roman ou de pièce de théâtre à l'écran.

- **125-420B CIVILISATION FRANÇAISE: L'ÈRE DES RÉVOLUTIONS (1789-1870).** (3 crédits). La civilisation française (vie politique, sociale, artistique) de 1789 à 1870.
Professeur Smith

125-421B CIVILISATION FRANÇAISE: LA RÉPUBLIQUE DÉMOCRATIQUE (1870-1940). (3 crédits). Ce cours se propose de faire la synthèse de l'histoire politique, économique, sociale et culturelle depuis la chute du Second Empire jusqu'à la Deuxième Guerre mondiale.
Professeur Smith

125-434A PROBLÈMES DE SOCIOLINGUISTIQUE DU FRANÇAIS. (3 crédits; Prérequis: 125-230B ou permission du professeur). Éléments de sociolinguistique et leur application aux pays francophones. Rapports entre les aspects phonologiques, grammaticaux et lexicologiques du parler et le milieu social. Dialectologie et argots.
Professeur Angenot

125-435B PROBLÈMES DE LINGUISTIQUE DU FRANÇAIS MODERNE. (3 crédits; Prérequis: 125-230B ou permission du professeur). Séminaire portant sur des problèmes généraux de la linguistique française.

125-440A ATELIER DE CRÉATIONLITTÉRAIRE. (3 crédits; Prérequis: Composition IV Ou V, 125-340D ou 125-341A). Le but du cours est de permettre aux étudiants d'écrire en fonction de leur sensibilité littéraire propre. Cours de dynamique créatrice, il est conçu comme l'aboutissement des études littéraires.
Professeur Rivard

125-445A PROBLÈMES DE TRADUCTION: TRADUCTION III. (3 crédits; Prérequis: 125-346B). Cours essentiellement pratique qui a pour but d'étudier les problèmes que pose la traduction dans des domaines divers. (Ouvert aussi aux étudiants extérieurs au Département qui ont les compétences voulues). (Les étudiants qui ont suivi le cours 125-445D ne seront pas admis).

125-446B PROBLÈMES DE TRADUCTION: TRADUCTION IV. (3 crédits). Suite du cours précédent. (Ouvert aussi aux étudiants extérieurs au Département qui ont les compétences voulues. (Les étudiants qui ont suivi le cours 125-445D ne seront pas admis).

125-450A POÉSIE DE 1850 À 1900. (3 crédits). La poésie de 1850 à 1900 présente différentes orientations. Ce cours propose l'étude des différents mouvements et "écoles" de cette époque. Les principaux poètes (Baudelaire, Hugo, Mallarmé, Verlaine, Rimbaud etc...) illustrant ces tendances seront considérés.
Professeur Morisot

125-453B POÉSIE DU XXe SIÈCLE. (3 crédits). Les principaux courants de la poésie en France depuis Apollinaire.
Professeur Jones

125-454B LE THÉÂTRE AU XXe SIÈCLE. (3 crédits). Étude de pièces contemporaines s'opposant à la tradition réaliste et présentant des analogies avec les mouvements poétiques et artistiques de l'époque: expressionnisme, cubisme, surréalisme. Théâtre de l'absurde et théâtre de la cruauté.
ProfesseurJones

- **125-455D INTRODUCTION À LA LANGUE ET À LA LITTÉRATURE MÉDIÉVALES.** (6 crédits). Survol de la production littéraire médiévale et du système de l'ancienne langue. Les divers genres littéraires seront abordés (conte, roman, théâtre, poésie).
Professeur Di Stefano

125-458B LA LITTÉRATURE FANTASTIQUE. (3

crédits). Considérations générales sur le genre. La matière portera alternativement sur des oeuvres, françaises et étrangères, du XIXe et du XXe siècles.
Professeur Starosta

125-460A LE THÉÂTRE AUX XVIIe ET XVIIIe SIÈCLES. (3 crédits). Étude d'oeuvres représentatives du théâtre français depuis le baroque jusqu'à la Révolution. Le contenu précis varie d'année en année; consulter le Département.
Professeur McGillivray

- **125-462A HISTOIRE DE LA PENSÉE FRANÇAISE.** (3 crédits). Littérature et idéologies en France au XXe siècle. Rapports entre littérature et politique de 1920 à 1950 environ.

125-463B HISTOIRE DE LA PENSÉE FRANÇAISE. (3 crédits). Cours à contenu variable. (Consulter le Département).
Professeur Jones

- **125-468A QUESTIONS DE LITTÉRATURE ET DE CULTURE I.** (3 crédits). Cours à contenu variable.

- **125-469B QUESTIONS DE LITTÉRATURE ET DE CULTURE II.** (3 crédits).

125-470A POÉSIE QUÉBÉCOISE DE CRÉMAZIE À SAINT-DENYS-GARNEAU (1850-1940) (3 crédits). Naissance et développement de la poésie québécoise jusqu'à la Seconde Guerre mondiale. Rapports entre poésie et société. Influences subies. La querelle du régionalisme. Étude d'oeuvres marquantes.
Professeur Pascal

125-471B POÉSIE QUÉBÉCOISE D'ALAIN GRANDBOIS À NOS JOURS (DEPUIS 1940). (3 crédits). De l'introspection au surréalisme et à l'automatisme (Alain Grandbois, Paul-Marie Lapointe, Ronald Giguère, Gilles Hénault et Claude Gauvreau) en passant par les mouvements divers, tels que ceux de l'Hexagone, de Liberté, de Parti-pris (Paul Chamberland) et de La Barre du Jour. Différentes approches seront utilisées pour l'étude des oeuvres. Nous réserverons une place importante à *L'homme rapaillé*.
Professeur Pascal

125-479B LA LITTÉRATURE FÉMININE. (3 crédits). Étude de la problématique de la femme dans des oeuvres marquantes de la littérature française ou québécoise. La matière précise varie d'année en année. Consulter le Département. (Les étudiants qui ont suivi le cours 125-464A ou 125-474A ne seront pas admis).
Professeur Pascal

125-485A L'ESSAI QUÉBÉCOIS AVANT 1960. (126-436D). (3 crédits). Littérature et idéologie au Québec depuis le 19e siècle. La question nationale. Principaux mouvements d'idées. Étude de l'oeuvre de quelques essayistes importants.
Professeur Jones

125-486B L'ESSAI QUÉBÉCOIS DEPUIS 1960. (126-462D). (3 crédits). Littérature et idéologie au Québec depuis les débuts de la "Révolution tranquille". Principaux mouvements d'idées. Étude de l'oeuvre de quelques essayistes importants.
Professeur Rivard

125-491A SÉMINAIRE SPÉCIALISÉ DE LITTÉRATURE FRANÇAISE I. (3 crédits). Réservé aux étudiants inscrits en Spécialisation.
Professeur Cremona

125-492B SÉMINAIRE SPÉCIALISÉ DE LITTÉRATURE FRANÇAISE II. (3 crédits). Réservé aux étudiants inscrits en Spécialisation.
Professeur Ethier-Blais

125-495A SÉMINAIRE SPÉCIALISÉ DE LITTÉRATURE QUÉBÉCOISE I. (3 crédits). Réservé aux étudiants inscrits en Spécialisation.

125-496B SÉMINAIRE SPÉCIALISÉ DE LITTÉRATURE QUÉBÉCOISE II. (3 crédits). Réservé aux étudiants inscrits en Spécialisation.
Professeur Rivard

125-510B TRADUCTION LITTÉRAIRE: (3 crédits; Prérequis: 125-446B ou examen d'entrée au premier cours). Étude des problèmes pratiques que pose la transposition en français de qualité d'un texte originellement rédigé en anglais littéraire. Exercices écrits hebdomadaires.
Professeur Ethier-Blais

125-520A ÉVOLUTION DE LA LANGUE FRANÇAISE AU CANADA. (3 crédits; Prérequis: 125-235D ou permission du professeur). Le franco-canadien (ou franco-québécois) à partir de 1760. Étude des rapports entre l'évolution de la société et l'évolution de la langue. Le cours est conçu pour donner aux étudiants l'occasion d'effectuer des recherches personnelles.
Professeur Rabotin

125-550A LECTURES GUIDÉES I. (3 crédits). Lectures personnelles ayant pour but de permettre à l'étudiant de combler une lacune ou de satisfaire un intérêt personnel. Admission sur autorisation spéciale.
Membres du Département

125-551B LECTURES GUIDÉES II. (3 crédits). Lectures personnelles ayant pour but de permettre à l'étudiant de combler une lacune ou de satisfaire un intérêt personnel. Admission sur autorisation spéciale.
Membres du Département

125-560A ASPECTS DE CULTURE FRANÇAISE ET QUÉBÉCOISE. (3 crédits). Cours à contenu variable. La matière, qui varie d'année en année, porte sur un domaine précis de littérature ou de l'histoire des idées en France ou au Québec. Consulter le Département.

125-561B ASPECTS DE CULTURE FRANÇAISE ET QUÉBÉCOISE. (3 crédits). Suite du cours précédent.

125-590A HISTOIRE DE LA CRITIQUE AU XXe SIÈCLE. (3 crédits). Ce cours vise à mettre en lumière les tendances principales de la critique depuis Bachelard: phénoménologie, existentialisme, psychocritique, thématique, sociologie, structuralisme. Le travail sera centré sur l'étude approfondie de quelque soeuvres critiques particulièrement significatives.
Professeur Kushner

125-591B ANALYSE D'UN COURANT THÉORIQUE DE LA CRITIQUE CONTEMPORAINE. (3 crédits; prérequis: 125-590A ou permission du professeur). Ce cours comportera une analyse épistémologique de textes critiques, accompagnée d'une tentative d'application à un corpus littéraire sélectionné, sous forme de séminaire.
Professeur Angenot

GEOGRAPHY (183)

Burnside Hall,
805 Sherbrooke St. West,
Montreal, PQ, H3A 2K6.
Chairman: Room 510, telephone: 392-5489
General Inquiries: Room 513,
Telephone 392-5700

The Geography Department offers degrees in both the Faculty of Arts and the Faculty of Science. For a full description of the courses and for an outline of the nature of Geography and the opportunities for study in this discipline, the student should consult the listings under Geography in the Faculty of Science section of the announcement.

B.A. students planning to take an Honours or a Major in Geography should arrange an interview with a departmental adviser at least one week before registration.

B.A. MAJOR IN GEOGRAPHY

Contact Burnside Hall, Room 513, Telephone 392-5700 for an appointment with an adviser.

NOTE: It is recommended that courses which are **in bold print** be taken in U1.

GENERAL PROGRAM

45 approved credits in Geography and 12 approved credits in related subjects from the Social Sciences. The Geography courses must include: 183- **201A,B, 202A, 203D, 214A, 216A,** 351B, 6 credits of selected regional courses 3 credits of cultural or development geography, 3 credits of urban or economic geography, and 3 credits of physical geography.

SPECIAL PROGRAMS

Cultural Ecology

Geography **183-203D, 214A,** 351B 403B, 408A, 414B Anthropology 151-206B plus 36 approved credits in Geography, Anthropology and Biology

57 credits

Geography of Economic Activity

Geography **183-201A,B, 202A, 216A, 217B,** 311B, 314A, 315B, 318A, 351B, 408A.

Economics **154-200D,** 313D plus 12 plus other approved credits.

54 credits

Urban Systems

54 approved credits from the following –

Geography **183-201A,B, 202A, 203D, 216A, 217B,** 302D, 313A, 314A, 325B, 331B, 333A, 351B (or approved course in Mathematics, Statistics, or Computer Science), 412B, 413A, 422B.

Anthropology 151-221A, -421B

Architecture 301-378A, -435B, -436A, -482B, -484B. (all are 2 credit courses)

Civil Engineering 303-430B, -433B, -540A

Economics **154-200D or 250D or 203A and 204B,** 425B, 568A

Sociology **166-222B**

Political Science 160-318A, -465B, -466B

Classics 114-306B

Law 495-472X
French Canada Studies 157-466B

54 credits

B.A. HONOURS IN GEOGRAPHY

Contact Burnside Hall, Room 513, Telephone 392-5700 for an appointment with an adviser.

The Geography Department offers three programs in the B.A. Honours sequence. The General Program permits the student to range over a broad spectrum including courses in physical geography and environmental studies, whereas the Economic/Urban and Cultural Programs provide for more specialized instruction in areas of human geography. The programs are very similar in the first year and a student may defer the choice of prog ram until the beginning of the second year.

All three B.A. Honours programs involve completion of at least 54 credits in approved geography courses (including a 6-credit research course) and at least 9 credits in approved social science courses outside geography. The balance

(of up to 27 credits) comprises electives. The following lists specify those courses which are compulsory in these programs. **A detailed descriptionof each program with all approved courses is available from the departmental office, Room 513, Burnside Hall,** telephone 392-5700.

Note: It is recommended that courses which are in bold print be taken in U1

CORE COURSES (all programs):

Geography **201A,B, 202A, 203D,** 481A, 491D,N.

URBAN/ECONOMIC PROGRAM:

Geography **214A, 216A, 217B,** 351B

CULTURAL PROGRAM:

Geography **214A, 216A,** 309A or 311B, 331B or 333A, 351B

GENERAL PROGRAM:

Geography 302D, 306B or 308A, 325B, 326B or 236A or 311B, 351B or 495G

For detailed description of Geography courses see under Faculty of Science, page 193.

PREREQUISITES

There are no departmental prerequisites for entrance to the Major or Honours B.A. or B.Sc. in Geography. It is helpful for Arts students include six credits of Mathematics in their CEGEP or pre-university programs. Students who have completed college or pre-university Geography courses fully equivalent to those of first year university may substitute with their adviser's approval, other courses as part of the Major or Honours programs.

INTRODUCTORY COURSES

Students intending to continue in human geography may find Geography 110A and 112B useful elective courses in addition to those courses required in the Honours and Major programs.

Students intending to continue in physical geography should enroll in Geography 183-203D. Those students who have not taken physical geography or earth sciences at the Collegial level, and those students who do not intend to continue further in physical geography are recommended to take Geography 183-113B (a treatment of physical geography at the global scale).

Students seeking an overview of world geographic problems, and not necessarily wishing to continue in geography, are recommended to take Geography 183-110A, 112B and/or 113B.

GERMAN (129)

Professors – A. ARNOLD; P. DALY *(Chairman)*
Associate Professors – E. GALLATI: T. GOLDSMITH-REBER; A. HSIA; H. RICHTER: J. SCHMIDT: I. SCHUSTER
Assistant Professor – D. SAKAYAN

Samuel Bronfman Building,
1001 Sherbrooke St. West,
Departmental Office, Room 613,
Montreal, PQ, H3A 1G5
Telephone: 392-5091.

Note: Students may begin at the Intermediate or Advanced level in their first year if they have taken German courses in High school or in CEGEP or in a McGill Summer Session. During the Summer Session the courses 129-202L and 252L are offered every year.

HONOURS IN GERMAN

Advisers: Professor Schuster and Professor Schmidt

Samuel Bronfman Bldg., 392-5090/392-5741

The Department offers an Honours Program in German and Joint Honours with nine Departments. The Honours program in German requires at least 60 credits in German. The normal language sequence is 129-201D, 251D, 301A and 302B, or equivalent. Literature courses provide an introduction to the major periods from the Middle Ages to the present: 129-510A or 511B, 461B, 380A, 381B, 450A, 451B, 350A, 351B, two of 360A, 361B, 362A, 363B, 365A/B, plus 371B or equivalent. The student chooses 9 credits electives.

Students may register for Honours or Joint Honours in their second year if they have assembled the necessary credits in German.

JOINT HONOURS PROGRAM

Advisers: Professor Gallati and Professor Schmidt, Samuel Bronfman Bldg., 392-5094/ 392-5741.

Joint Honours are possible with the following Departments: Classics, English, French, History, Italian, Linguistics, Philosophy, Russian, Spanish. Students enrolled in joint honours will take 36 cedits in German. The normal language sequence is 129-201D, 251D, 301A, and 302B, or equivalent. Two literature courses from the Age of Goethe are required and 12 credits in senior level courses.

MAJOR IN GERMAN

Advisers: Professor Gallati and Professor Schmidt, Samuel Bronfman Bldg., 392-5094/ 392-5741.

54 credits in German and 12 credits in a related field (another language, History, Linguistics, Philosophy, etc.), The courses are to be selected in consultation with the Department.

Course Descriptions

NOTE: For updated information on courses, text lists, teaching-staff etc. contact the departmental office.

- *Denotes not offered in 1982-83.*

Beginners' Level

A. EMPHASIS ON LANGUAGE

129-200D GERMAN LANGUAGE INTENSIVE BEGINNERS' COURSE. (12 credits, 10 hours). Intensive language course, covering the first two levels in one year rather than the usual two. Limited to 25 students. Permission of instructor.

129-201D GERMAN LANGUAGE, ACCELERATED BEGINNERS' COURSE. (6 credits; 5 hours; Prerequisite: none). *Text:* Lohnes and Strothmann, *German. A Structural Approach* (Norton). A structural approach designed to develop understanding and communication skills, with the stress on fluency and correctness in oral and written expression.

129-202D GERMAN LANGUAGE, BEGINNERS' COURSE. (6 credits; 3 hours; *Prerequisite:* none). *Text:* Lohnes and Strothmann, *German. A Structural Approach* (Norton). A structural approach designed to develop understanding and communication skills.

129-203D GERMAN LANGUAGE, BEGINNERS' COURSE. (6 credits: 3 hours). *Text:* Jannach: *German for Reading Knowledge.* A reading course, concerned exclusively with reading ability. Recommended for B.Sc. or engineering students.

B. EMPHASIS ON LITERATURE AND CIVILIZATION

129-210A GERMAN LITERATURE IN TRANSLATION. (3 credits; 3 hours; in English). Recommended for students taking a Beginners' Language Course concurrently. Works by major authors of the 19th century (Goethe, Nietzsche) will be discussed.

129-211B GERMAN LITERATURE IN TRANSLATION. (3 credits; 3 hours; in English). Recommended for students taking a Beginners' Language Course concurrently. Works by major authors of the 20th century (Mann, Kafka, Brecht etc.) will be discussed.

- **129-212A GERMAN LIFE AND INSTITUTIONS I.** (3 credits; 3 hours; in English). Recommended for students taking a Beginners' Language Course concurrently.
- **129-213B GERMAN LIFE AND INSTITUTIONS II.** (3 credits; 3 hours; in English). Recommended for students taking a Beginners' Language Course concurrently.

Intermediate Level

A. EMPHASIS ON LANGUAGE

129-251D GERMAN LANGUAGE, ACCELERATED INTERMEDIATE COURSE. (6 credits; 5 hours; *Prerequisite:* German 201 or equivalent). Texts: Herbert Knust, *Texte und Übungen, Grundwortschatz Deutsch; Übungen und Tests zu Grundwortschatz;* one or two literary texts. Students completing this course will be admitted to any senior course in the Department.

129-252D GERMAN LANGUAGE. INTERMEDIATE COURSE. (6 credits; 3 hours; *Prerequisite:* 202D or equivalent). Texts: Sparks-Vail: *German in Review;* Richmond-Kirby: *Auslese.* The stress is on oral and written comprehension and expression.

- **129-253D GERMAN LANGUAGE INTERMEDIATE COURSE.** (6 credits; 3 hours; *Prerequisite:* German 203D or equivalent). *Texts:* Bergethon: *Grammar for Reading German;* Jannach: *Humanities and Social Sciences.* The stress is on comprehension of academic texts.
- **129-254D GERMAN LANGUAGE. ADVANCED INTERMEDIATE COURSE.** (6 credits; 3 hours plus 1 hour laboratory; *Prerequisite:* high marks in 202D or two years of German at the high school or CEGEP level or equivalent). *Texts:* Lehmann, Rehder, Shaw and Werbow: *Review and Progress;* short novels and stories.

B. EMPHASIS ON LITERATURE AND LINGUISTICS

Text lists for and details on all of the following courses are available from the German Department Office.

One or two of the following courses are usually taken by students who are concurrently registered in 251D.

129-259A INTRODUCTION TO GERMAN LITERATURE, MIDDLE AGES TO GOETHE. (3 credits; 3 hours; *Prerequisite:* 201D or equivalent or permission of Department). (Not open to students who have taken 129-260D).

129-260B INTRODUCTION TO GERMAN LITERATURE, FROM GOETHE TO THE PRESENT. (3 credits; 3 hours; *Prerequisite:* 201D or equivalent or permission of the Department). (Not open to students who have taken 129-260D).

129-261A DESCRIPTIVE GERMAN GRAMMAR. (3 credits; 3 hours; *Prerequisite:* An intermediate language course or permission of the Department).

129-262B DESCRIPTIVE GERMAN LINGUISTICS. (3 credits; 3 hours; *Prerequisites:* 261A or an intermediate language course or permission of the Department).

129-397A INDIVIDUAL READING COURSE. (3 credits).

129-398B INDIVIDUAL READING COURSE. (3 credits).

129-399D INDIVIDUAL READING COURSE. (6 credits).

Advanced Level

A. EMPHASIS ON LANGUAGE

129-301A, 129-302B FUNCTIONAL GERMAN I. (3 credits each; 5 hours; *Prerequisite:* 251D or 250-300 hours of German or equivalent or permission of the Department). Discussion of newspaper articles *(Die Zeit, Der Spiegel),* literary texts, and general topics. The stress is on vocabulary building and on fluency of speech.

129-303A, 129-304B FUNCTIONAL GERMAN II. (3 credits each; 4 hours; *Prerequisite:* 252D or 254D or 200 hours of German or equivalent). Aim of the course; same as in 301. *(Not* open to Honours and Major candidates).

129-305A GERMAN LANGUAGE (SPECIAL COURSE). (3 credits; 3 hours). This course is intended for students who have a conversational knowledge of German, but little formal training in *writing* the language. The stress is on the grammatical knowledge of German and includes a total review of all grammatical forms. The course can be taken concurrently with a functional course at the same level. (Not open to students who have taken 129-305D).

129-306B GERMAN LANGUAGE (SPECIAL COURSE). (3 credits). This course is intended for students who have a conversational knowledge of German, but little formal training in *writing* the language. The stress is on the syntactical knowledge of German and includes a review of all grammatical forms. (Not open to students who have taken 129-305D).

B. EMPHASIS ON LITERATURE

- **129-310D GERMAN LITERATURE FROM LESSING TO BRECHT.** (6 credits; 3 hours; *Prerequisite:* 251D or 252D or 200 hours of German or equivalent). Texts: Several plays, "Novellen" and anthologies.

Senior Courses

(Literature, Linguistics, Philology, Stylistics)

NOTE: Text lists for and details about all of the following courses are available from the Departmental office. Not all courses are offered every year.

Prerequisites for all senior courses are German 200D or 251D or any course at the advanced level or permission of the Department.

A. LITERATURE

129-340A or B SCANDINAVIAN LITERATURE (in English). (3 credits).

129-350A GERMAN LITERATURE IN THE NINETEENTH CENTURY I, "BIEDERMEIER" AND "YOUNG GERMANY". (3 credits). (Not open to students who have taken 129-350D).

129-351B GERMAN LITERATURE IN THE NINETEENTH CENTURY II, REALISM (1850-1880). (3 credits). (Not open to students who have taken 129-350D).

129-352A or B SPECIAL TOPICS IN GERMAN LITERATURE IN THE NINETEENTH CENTURY III (1815-1880). (3 credits).

- **129-360A GERMAN LITERATURE IN THE TWENTIETH CENTURY I, FROM NATURALISM TO EXPRESSIONISM.** (3 credits).

129-361B GERMAN LITERATURE IN THE TWENTIETH CENTURY II. (3 credits).

129-362A GERMAN LITERATURE IN THE TWENTIETH CENTURY III. (3 credits).

- **129-363B GERMAN LITERATURE IN THE TWENTIETH CENTURY IV' THE Post-War Period.** (3 credits).

129-365A or B MEDIA STUDIES IN GERMAN. (3 credits).

129-380A GERMAN LITERATURE OF THE ENLIGHTENMENT. (3 credits).

129-380A GERMAN LITERATURE OF THE "STURM UND DRANG" PERIOD. (3 credits).

129-390D HONOURS TUTORIAL I. (6 credits).

129-450A THE CLASSICAL PERIOD IN GERMAN LITERATURE. (3 credits).

129-451B GERMAN ROMANTICISM. (3 credits).

129-452A or B SPECIAL TOPICS IN GERMAN LITERATURE OF THE CLASSIC-ROMANTIC PERIOD. (3 credits).

129-460A GERMAN LITERATURE IN THE AGE OF REFORMATION. (3 credits).

129-461B GERMAN LITERATURE OF THE BAROQUE PERIOD. (3 credits).

129-490D HONOURS TUTORIAL II. (6 credits).

129-497A INDIVIDUAL READING COURSE. (3 credits).

129-498B INDIVIDUAL READING COURSE. (3 credits).

129-499D INDIVIDUAL READING COURSE. (6 credits).

B. PHILOLOGY AND LINGUISTICS

129-370A GERMANIC PHILOLOGY. (3 credits). A survey of the history of the Germanic languages from their Indo-European origin until the end of the Germanic migrations. The main topics of study will be the Germanic sound shift, West Germanic phonological developments and the emergence of the West Germanic dialects.

129-371B HISTORY OF THE GERMAN LANGUAGE. (3 credits). An outline of the history of the language from Charlemagne to the present. The main developments in phonology, syntax and lexicon will be covered together with the essentials of the cultural background.

129-500A or B READINGS IN A GERMANIC LANGUAGE (Gothic, or Old Icelandic, or Old Saxon). (3 credits).

- **129-501A or B INTRODUCTION TO OLD HIGH GERMAN.** (3 credits).

129-510A MIDDLE HIGH GERMAN LANGUAGE. (3 credits).

129-511B MIDDLE HIGH GERMAN LITERATURE. (3 credits).

C STYLISTICS, TRANSLATION, PHONETICS, RHETORIC

129-320A TRANSLATION I. (3 credits).

129-321B TRANSLATION II. (3 credits).

129-401A, 129-402B FUNCTIONAL GERMAN (ADVANCED) I. (3 credits each; 5 hours; *Prerequisite:* 129-301A and 129-302B) or equivalent in language training and permission of instructor on basis of mark of 70% in a placement test administered in the first week of classes.

129-403A, 129-404B FUNCTIONAL GERMAN (ADVANCED) II. (3 credits each; 4 hours; *Prerequisite:* 129-303A and 129-304B).
Note: **not** open to Honours and Major candidates.

129-520A ADVANCED COMPOSITION AND TRANSLATION. (3 credits).

129-521B GERMAN STYLISTICS. (3 credits).

129-530A or B THEORETICAL AND PRACTICAL GERMAN PHONETICS (CONTRASTIVE). (3 credits).

HISPANIC STUDIES (144)

Professor – SOLOMON LIPP
Associate Professors – MARCELINO AMASUNO; MONICA HARVEY; Z. NELLY MARTINEZ; ANDRÉ MICHALSKI *(Chairman)*; VICTOR OUIMETTE; VICTORIANO UGALDE CUESTA
Assistant Professor – KAY M. SIBBALD
Faculty Lecturer – JEAN-MARC VARY
Lecturer – M. APARECIDA DE ALMEIDA

Room 680, Samuel Bronfman Building,
1001 Sherbrooke St. West,
Montreal, PQ, H3A 1G5
Telephone: 392-4600

The Hispanic Studies Department offers courses in language as well as literature and civilization of Spain and Latin America. The basic philosophy of the Department is dominated by a desire to expand the students' liberal arts background by acquainting them with the culture of other national groups. An enrichment in this area, it is felt, reduces provincialism and broadens one's intellectual horizon. This humanistic approach is indispensable, regardless of professional interests or fields of specialization, such as high school or college teaching, or work in Latin American studies. One is a more competent professional if one has been exposed to this perspective.

MAJOR PROGRAM

42 credits above the second year language level plus 12 credits in related subjects, approved by the Department. Students may wish to concentrate either in Peninsular Spanish literature or Spanish American literature. At least twelve credits should be taken in Spanish American literature if the Major is in Spanish literature, and vice versa.

6 credits in civilization
6 credits in survey of literature
A minimum of 9 credits in Golden Age literature (this includes Spanish 144-451D)

Adviser to Major Program: Professor Amasuno, 392-4615.

HONOURS PROGRAM

With the permission of the Department, a more advanced Spanish course may be taken if the student has studied Spanish previously and has acquired proficiency in oral work.

The Honours program in Spanish has been designed to enable the student to pursue studies in one of two directions:
1) Emphasis on Spanish Literature
2) Emphasis on Spanish American Literature

Honours students are expected to achieve a

high 'B' in all Spanish courses, as well as satisfactory standing in all other courses.

In order to be graduated with Honours in Spanish, students will be required to write a research paper on a theme of their choice, under the guidance of a member of the Department.

The Department reserves the right to determine whether a student will be advanced or withdrawn from the Honours program.

Prerequisite: A first year Spanish course with a final grade of 75%.

Requirements: A minimum of 60 credits above the second year language level.

NOTE: Courses numbered in the 50s (e.g., 351, 453, etc.) are designed primarily for Honours students. However, others may enrol with the permission of the instructor.

Obligatory Courses (to be taken during the U-2 or U-3 years):

Spanish 144-355A (Methods of Literary Analysis)
Spanish 144-456A (History of the Language)
Spanish 144-457B (Medieval Literature)
Spanish 144-440A (Themes in Hispanic Literature)

A minimum of 9 credits in Golden Age Literature, including 144-451D (Cervantes)

Honours students are required to take either Spanish Civilization and Survey of Spanish American Literature or Spanish American Civilization and Survey of Spanish Literature as basic courses.

Honours adviser: Professor Harvey, 392-4618.

JOINT HONOURS

Students may combine Honours in Spanish with Honours in any one of the following subjects: Classics, English, French, German, Italian, Jewish Studies, Linguistics, Philosophy, Russian.

Requirements: A minimum of 36 credits above the second year language level.

Obligatory Courses

Spanish 144-355A (Methods of Literary Analysis)
Spanish 144-456 (History of the Language)
Spanish 144-457B (Medieval Literature)
Spanish 144-440A (Themes in Hispanic Literature)

A minimum of 9 credits in Golden Age literature including 144-451D (Cervantes)

Students may begin Single or Joint Honours in Spanish in their second year if, in the opinion of the Department, they are qualified to do so.

Adviser: Professor Martínez, 392-4602.

Course Descriptions

All Spanish courses, including 144-210D after the first weeks, are given in Spanish.

- *Denotes not given in 1982-1983.*

- **144-202D PORTUGUESE LANGUAGE: BEGINNERS.** (6 credits). A comprehensive first year course in speaking, reading and writing. Selected readings in Portuguese and Brazilian literature. This course is restricted to beginners only. Four hours weekly, including laboratory.
Staff

144-204D PORTUGUESE LANGUAGE: INTERMEDIATE. (6 credits). Review of grammar. Practice in speaking and writing. Composition. Selected readings in Portuguese and Brazilian literature.
Dr. de Almeida

144-210D SPANISH LANGUAGE. (6 credits). A comprehensive first year course in speaking, reading and writing. An introduction to Spanish and Spanish American civilization. Four hours weekly, including laboratory.
Staff

- **144-217A,B ADVANCED SPANISH ORAL AND WRITTEN EXPRESSION.** (3 credits; Preequisite: twoyears Spanish at the CEGEP level or equivalent). Review of grammar. Practice in speaking and writing. Three hours weekly. (Not open to students who have taken or are taking 144-214, 215 or 216).
Professor Sibbald

144-220D ADVANCED SPANISH ORAL AND WRITTEN EXPRESSION. (6 credits). Second year course. Review of grammar. Practice in speaking and writing. Completion of this course admits students to senior courses. Prerequisite: 210D or equivalent. Three hours weekly. (Not open to students who have taken or are taking 144-215, 216 or 217).
Professor Ugalde and Staff

144-221A SPANISH CIVILIZATION. (3 credits). Survey of the culture and history of the Spanish people from origins to the rise of the Spanish empire.
Professor Amasuno

144-222B SPANISH CIVILIZATION. (3 credits). Survey of the culture and history of the Spanish people from the Golden Age (including the Conquest of the New World) to the present era.
Professor Amasuno

144-231A SPANISH AMERICAN CIVILIZATION. (3 credits). From the indigenous period (Aztec, Maya and Inca civilizations) to Independence from Spain.
Professor Michalski

144-232B SPANISH AMERICAN CIVILIZATION. (3

credits). From Independence to the present era.
Professor Lipp

144-241A SURVEY OF SPANISH LITERATURE. (3 credits). From the origins to the Golden Age, through a study of representative works.
Professor Amasuno

144-242B SURVEY OF SPANISH LITERATURE. (3 credits). From the Golden Age to the modern period through a study of representative works.
Professor Ouimette

144-243A SURVEY OF SPANISH AMERICAN LITERATURE. (3 credits). From the Colonial period to Modernism through a study of representative works.
Professor Michalski

144-244B SURVEY OF SPANISH AMERICAN LITERATURE. (3 credits). From Modernism to the present through a study of representative works.
Professor Martínez

- **144-315A FUNCTIONAL SPANISH.** (3 credits). A Third Year level course: problems of advanced grammar and syntax. Written exercises, oral reports and summaries of reading selections will provide the basis for discussion. For Spanish majors. (Not open to students who have taken or are taking 144-316A,B).
Professor Amasuno

144-316A FUNCTIONAL SPANISH. (3 credits; Prerequisite: 144-220D or equivalent). A language course at the third year level for students who are NOT Spanish majors or honours in the Department of Hispanic Studies (Not open to students who have taken or are taking 144-315A,B).
Mr. Vary

- **144-321A SPANISH LITERATURE OF THE 18th CENTURY.** (3 credits). A critical study of neo-classical drama and poetry; satirical prose; Jovellanos, Iriarte, Moratín and others.
Professor Sibbald

144-324B 20TH CENTURY DRAMA. (3 credits). Satirical drama and theatre of social protest. *Literatura comprometida.* Garcia Lorca and Casona; Buero Vallejo, Sastre, Olmo Muñiz, Arrabal and others.
Professor Sibbald

144-325D THE SPANISH NOVEL OF THE 19TH CENTURY. (6 credits). The Romantic, Realist and Naturalist novel in Spain, with special emphasis on the works of Pérez Galdós and the development of the Spanish novel in relation to contemporary trends in other European countries.
Professor Ouimette

144-326B SPANISH ROMANTICISM. (3 credits). The aesthetic and historical development of Romanticism, with special emphasis on lyric poetry and drama. (Not open to students who have taken 144-322B or 144-323A).
Professor Amasuno

- **144-327A LITERATURE OF IDEAS: SPAIN.** (3 credits). Critical reading and discussion of works of outstanding thinkers as a key to understanding the development of social forces and institutions.
Professor Lipp

- **144-328B LITERATURE OF IDEAS: SPANISH AMERICA.** (3 credits). Critical reading and discussion of works of oustanding thinkers as a key to understanding the cultural development of a continent.
Professor Lipp

- **144-332A SPANISH AMERICAN LITERATURE OF THE 19TH CENTURY.** (3 credits). An intensive study of representative authors from the period of Independence to the advent of Modernism.
Professor Lipp

- **144-333A SPANISH AMERICAN THEATRE.** (3 credits). A study of the outstanding works of the theatre from the colonial period to the present, including pre-Columbian works.
Professor Harvey

- **144-350D THE GENERATION OF 1898.** (6 credits). Spiritual and intellectual renewal in Spain from the war of 1898 to the Civil War, as seen principally in the works of Unamuno, Antonio Machado, Baroja and Valle Inclán. Politics and aesthetics.
Professor Ouimette

144-351D SPANISH AMERICAN NOVEL OF THE 20TH CENTURY. (6 credits). Representative authors of the 20th Century. The novel of the land: The Indianist Novel, The Mexican Revolution.
Professor Lipp

144-355A METHODS OF LITERARY ANALYSIS. (3 credits). Discussion of literary style and techniques; recent trends in criticism. Critical study of various authors for purposes of illustration.
Professor Martínez

144-356B SPANISH AMERICAN SHORT STORY. (3 credits). Study of style, tendencies and types as reflected in the evolution of this genre, and seen against the background of a developing continent.
Professor Michalski

144-421A GOLDEN AGE PROSE. (3 credits). The Picaresque and Pastoral Novels. Satirical prose.
Professor Ugalde

144-422B GOLDEN AGE PROSE. (3 credits). Didactic Prose. Ascetism and Mysticism.
Professor Ugalde

- **144-423B MODERN LYRIC POETRY.** (3 credits). Poets in exile and counter movements in 20th Century Spain: García Lorca, Alberti, Salinas, Aleixandre, Cernuda and Hernández.
Professor Sibbald

144-424B SPANISH NOVEL SINCE THE CIVIL WAR.

(3 credits). Cela and Tremendismo. Women novelists. Writers in exile: Goytisolo and others.
Professor Amasuno

- **144-432B SPANISH AMERICAN COLONIAL LITERATURE.** (3 credits). A study of the outstanding works from the period of conquest and colonization to the wars of Independence.
Professor Michalski

144-440A THEMES IN HISPANIC LITERATURE. (3 credits). Reserved for Honours students who are writing their honours thesis during their final year of study.
Staff

- **144-442A MODERNISMO.** (3 credits). A study of the Modernist School of Spanish American authors.
Professor Martínez

- **144-451D CERVANTES.** (6 credits). A study of the complete *Don Quijote,* the *Novelas ejemplares,* the *Entremeses* and other theatrical works. Some account of outstanding critical works on Cervantes. (Not open to students who have taken 144-451B or 144-452A).
Professor Ugalde

- **144-453A SPANISH AMERICAN POETRY SINCE MODERNISMO.** (3 credits). Study of major poets illustrating representative trends (Huidobro, Mistral, Vallejo, Neruda, Cardenal).
Professor Martínez

- **144-454B THE "NEW" SPANISH AMERICAN NOVEL.** (3 credits). Study of key works representing Spanish American Realism and its ties with social realism (Carpentier, García Márquez, Asturias, Aguilera Malta) (Not open to students who have taken 144-454D).
Professor Michalski

- **144-455B THE "NEW" SPANISH AMERICAN NOVEL.** (3 credits). Study of major works illustrating prevailing ideologies as they emerge from a particular, aesthetic use of language (Fuentes, Donoso, Vargas Llosa, L.R. Sánchez). (Not open to students who have taken 144-454D).
Professor Martínez

- **144-456A HISTORY OF THE SPANISH LANGUAGE.** (3 credits; Prerequisite for 144-457B). The development of Spanish from its beginnings to the Modern Period, including usage in Spanish America and Judeo-Spanish.
Professor Harvey

- **144-457B MEDIEVAL LITERATURE.** (3 credits; Prerequisite: 144-456A). A study of important works of the period: *Poema de Mio Cid to La Celestina.*
Professor Amasuno

144-458D GOLDEN AGE DRAMA. (6 credits). Study of representative works by Lope de Vega, Tirso de Molina, Calderón de la Barca and others. (Not open to students who have taken 144-458A or 144-459B).
Professor Ugalde

- **144-460A GOLDEN AGE POETRY.** (3 credits). Study of representative poets of the Renaissance and Baroque periods from Garcilaso and Italian influences to Góngora and Quevedo.
Professor Sibbald

144-470A TUTORIAL. (3 credits)

144-471B TUTORIAL. (3 credits)

144-472D TUTORIAL. (6 credits)

HISTORY (101)

Professors – V.J. BOSS; L. DECHÊNE; P.C. HOFFMANN *(Chairman);* M.P. MAXWELL: H. SENIOR: R. VOGEL
Associate Professors – P.H. BOULLE; M.J. ECHENBERG *(on leave 1982-83);* J.W. HELLMAN *(on leave 1982-83);* E. LAFFEY; C.I. MILLER; Y. OTA; N. PARTNER; S.J. RANDALL; A.R. RIGGS; J.H. THOMPSON; B.J. YOUNG.
Assistant Professors – G.D. HUNDERT; M. PETTER *(on leave 1982-83);* R. RICE

General Office and information: Room 625, Sixth Floor, Stephen Leacock Building, 855 Sherbrooke St. West, Montreal, PQ, H3A 2T7.
Telephone: 392-5192.

Academic Advisers:
G. Hundert, A.R. Riggs.

The Department of History offers a wide range of courses in the history of such areas as Africa; Britain; Canada, with considerable emphasis being placed on French Canada and Québec; East Asia; Eastern Europe; France, Germany, Latin America, Russia and the United States. In addition, courses are offered on such topics as International Relations, the History of Medicine, Jewish History and War and Society. Greek, Roman, and Islamic history are taught in other departments with which the Department of History is closely associated.

The Department offers two kinds of programs – Honours and the Major. The Honours program offers a high degree of specialization in history with much individual instruction to qualified students. The Major provides for a measure of concentration in history in conjunction with an opportunity to take courses in other disciplines. Candidates who wish to study history as an Honours or Joint Honours subject, or who wish to major in History, must consult the Department as to their program. The general description of the Honours and Major programs will be found below.

Candidates entering University as U1 students may take all courses at the 200 level as well as courses at the 300 level for which they have prerequisites, where required.

MAJOR IN HISTORY

Director: G. Hundert
Office: Room 637, Stephen Leacock Building
Telephone Number 392-4304

Requirements:

Students who choose a Major in History should consult an adviser in the Department **before** the day of their formal registration at the University. Students who transfer to McGill are advised that no more than **12** of the **54** credits in a major program may be made up of credits transferred from another University.

The following types of Major programs are available within the Department of History.

1. AREA MAJOR

This is the most usual type of History major, in which a student concentrates in the history of a geographic area. The Department offers the following areas:

Canada, United States, Eastern Europe, Western Europe, Great Britain and Asia.

The area major consists of a total of **54 credits** divided as follows:

a) 24 credits in History **within** the area of specialization
b) 18 credits in History **unrelated** to the area of specialization
c) 12 credits **outside** History related in theme to the area of specialization. Introductory courses in some cases **do not** meet this requirement.

Please note that 24 of the 42 credits in History must be at the 300 level or above and that 30 of the 54 major credits must be at the 300 level or above.

2. THEMATIC MAJOR

This type of program can be arranged for students who do not wish to be bound to a particular area. Some examples of themes which have been used are Colonial Development, Imperialism,the Jews, and War and Society. In recent years the thematic major has been used to deal with students who wish to study North America, General Europe, non-Western Societies or The "Third World"

The thematic major consists of **54 credits** divided as follows:

a) 30 credits (not 24 as in # 1) in History **within** the theme of specialization
b) 12 credits in History **outside this theme**
c) **12 credits outside** History related to the theme

Please note that 24 of the 42 credits in History must be at the 300 level or above and that 30 of the 54 major credits must be at the 300 level or above.

3. MAJOR WITH A DOUBLE CONCENTRATION

These programs, administered solely by the Department of History, allow a student to concentrate in the study of History and another subject. The program contains **60 credits,** distributed as follows:

a) 30 credits in History, 18 of which must be at the 300 level or above
b) 30 credits in another subject, 18 of which must be at the 300 level or above

Please note that students in this program are **History majors.** This designation and **only** this designation appears on their transcripts.

4. MAJOR IN HISTORY AND POLITICAL SCIENCE

This is the department's only cooperative major program, and students selecting this program must consult an aviser in **both** the Department of History and the Department of Political Science. This program contains **60 credits** distributed as follows:

a) 30 credits in History, 18 of which must concentrate on a **theme**
b) 30 credits in Political Science, 18 of which must concentrate on a **theme.**
c) 18 of the 30 credits in History must be at the 300 level or above.

Students who register in any of the above programs should also be aware that:

1. Many related non-History courses have prerequisites, as for example those in Political Science, Economics and Sociology. Students must make certain that they take these prerequisite courses in the U1 or U2 year.
2. Introductory courses are in some cases not suitable as related non-History courses, since they provide only a basic introduction to a discipline. The best example of such a course is 154-200D, Introduction to Economics.
3. The total number of credits allotted to History courses is a **minimum.** Students may take other History courses as **electives.**

Under normal circumstances candidates who have completed the major program in History will not be eligible to enter the graduate program of the History Department unless they are prepared to do qualifying work.

HONOURS IN HISTORY

Director: A.R. Riggs
Office: Room 611, Stephen Leacock Building
Telephone Number: 392-5187

Requirements:

The purpose of the honours program is to give students an opportunityto study an area or theme of history in some depth under the close direction of a member of staff. Each honours student's program is worked out to suit the student's specific needs within the general framework of the program. The rules of the program are designed to lead the student from introductory courses to more advanced courses while, at the same time, enabling the student to acquire ancillary skills, such as language, which are necessary for historical research in particular areas.

Candidates are required to arrange their individual programs in consultation with the Department at the beginning of each academic year and to maintain a high CGPA (3.0 minimum in all history courses, and 3.0 minimum overall average).

The honours program in the History Department is divided into four major areas of concentration: the history of North America, the history of Great Britain, European history and East Asian history. Honours students are advised to have a reading knowledge of such foreign language or languages as may be appropriate to their proposed course of study.

The full honours history student normally takes eleven courses (sixty-six credits) in history over a three-year period (see note at the end of this statement). If a student must acquire a language or other ancillary skill, or if there is a strong case for taking a historically oriented course in another discipline, the history requirement can be diminished.

The **first year** of the program is primarily devoted to taking introductory history courses (usually 3) so that a general perspective on the past is obtained. Introductory courses should not be taken in the second and third years.

In the **second year** students begin to specialize in one of two ways. In addition to advanced courses that lead on from the work done in the previous year, students may either take two seminars, normally one in the second and one in the third year of study, or they may opt for the tutorial system.

The seminar option enables students to do research and participate in discussion in at least two areas which can be as far apart as "France during the Ancien Regime" and "Africa and the two World Wars". The student thereby acquires knowledge beyond that provided in an advanced course in at least two areas of specialization.

The tutorial route is designed for those students who wish to concentrate on one period of history. Students taking tutorials instead of the seminars work with one member of staff over a period of two years. As in other courses, evaluation and marks during each of the two years are based on the student's written and oral work. At the end of the second tutorial year, a **paper** is presented which is usually a substantial piece of work based on primary sources. Often a tutorial student will concentrate during U2 on the secondary works written about a particular period and in U3 work on primary material. The tutorial method provides students with a high degree of personal supervision.

Candidates for the honours degree may offer History 490D/491D – the two-year tutorial program – chosen from one of the following areas:

a) England in the Age of Wycliff,
   - England from the Restoration to the accession of George IV,
   - selected topics in Modern British history,
   - selected topics in Canadian history,
   - a topic in German history after 1800,
   - the Russian Revolutions of 1917,
   - topics in Jewish history,
   - West African history,
   - selected topics in United States history,

OR

b) they may choose to take one undergraduate seminar per year.

An **oral examination** at the end of U3 is given to all Full **and** Joint Honours students by a panel usually consisting of professors whose courses the candidate has taken. The oral examination enables the Department to arrive at an overall assessment of the candidates' success in their undergraduate studies. The results of oral examinations will not appear on official transcripts, but they are among the criteria in deciding on applications for admission to graduate study, and in recommending candidates to other departments, faculties, and graduate schools.

JOINT HONOURS:

Those students who find the full honours program too specialized may enroll in the joint honours program. This permits the division of the honours course requirements between history and another subject – anthropology, art history, classics, economics, English, French Language and Literature, geographly, German, Jewish Studies, philosophy, political science, and others; programs are worked out jointly by the history department and the other department concerned. Joint honours students take one history seminar within their six-course program in history. In a few cases joint honours students enter one of the two-year tutorials. Students should consult both departments with regard to programs and registration in joint honours courses. Programs will be designed to fit the individual interests of candidates but normally require an equal number of upper year courses in both disciplines.

NOTE:

Not as an encouragement for deviation from the programs outlined above, but in recognition of compelling circumstances and academically

legitimate wishes on the part of students, the possibilities for deviation from the usual 11-course requirement are defined as follows. No more than three full-year historically oriented courses may be taken, in exceptional cases, outside the Department of History, or outside the University. A maximum of one such course or history course, taken as a summer course may be accepted within the limits of the three courses outside the Department if strong academic reasons favour such a decision. History courses taken at CEGEP's cannot be part of the 11-course requirement. In joint honours programs, no more than one history or historically oriented course may be taken outside the Department. Students may take one advanced language course each in their U2 and U3 years and have them counted in their 11-course requirements, if these language courses are necessary and relevant to their program. Introductory language courses cannot be accepted as part of the honours program requirements. Bilingual students will not be permitted to take language courses in one of their two languages as part of their honours program requirements.

Course Descriptions

Supplementary Information: There are sometimes changes in the courses offered by the department after this announcement has been printed. Prior to registration, students should consult the Departmental office for information on additional courses or course deletions.

- *Denotes not given in 1982-83.*

- **101-200D A HISTORY OF AFRICA.** (6 credits). A study of African cultures from the beginning of the Iron Age to the contemporary emergence of African States, with emphasis on the period since 1780. Stress is placed on the political and cultural relations of African societies with each other, with Europe and with Islamic civilization.
Professor Echenberg

101-202A CANADA TO 1867. (3 credits). A survey of the development of Canada, from the pre-Columbian explorations until the Confederation period. Social, economic and political history will be examined in a general way. (Not open to students who have taken History 101-202D).
Staff

101-203B CANADA SINCE 1867. (3 credits). A survey of the development of Canada from Confederation to the present day. Social, economic and political history will be examined in a general way. (Not open to students who have taken History 101-202D).
Staff

101-204D HISTORY OF GREAT BRITAIN. (6 credits). Survey of the development of Britain from the Middle Ages. Emphasis will be placed on political changes, seen in relation to the economic, social and intellectual background.
Professors Senior and Vogel

- **101-205B A HISTORYOF EASTERN EUROPE FROM THE 4TH CENTURY TO 1453.** (3 credits). Anintroductorysurvey. The Byzantine Empire; the Slavic and Turkic migrations; the emergence of Poland, Bohemia, Hungary and Kievan Rus'; Christianization and paganism, Orthodoxy and heresy; the impact of the Mongol invasions; the decline of Byzantium; the Ottoman conquest of the Balkans. (Not open to students who have taken History 101-206D).
Staff

101-207B HISTORY OF THE JEWS FROM THE HELLENISTIC PERIOD TO THE END OF THE TALMUDIC AGE. (3 credits). This course will provide an overview of Jewish history from the period of Ezra and Nehemiah to the death of Hai Gaon, *c.* 1035. Focussing on the experience of the Jews in Hellenistic and Islamic civilizations, topics discussed will include Jewish sects, rabbinic literature in its various genres, the Karaite schism, and the rise of the Gaonate. (Not open to students who have taken History 101-207D).
Professor Hundert

101-208A THE DEVELOPMENT OF EAST ASIAN CIVILIZATION TO 1800. (3 credits). History and salient features (social, political, economic, and intellectual) of the traditional civilization of China and Japan, from earliest times to 1800. This course provides a preparation for the study of East Asian history. (Not open to students who have taken History 101-208D).
Professor Laffey

101-211A THE UNITED STATES TO 1865. (3 credits). English colonization of North America, development of representative government, colonial wars and revolution, the Constitution, society and politics of the nineteenth Century, and the Civil War. Emphasis is placed on Puritanism, the American Revolution, and the men who fashioned and guided the new republic.
Professor Riggs

- **101-214D HISTORY OF IRELAND.** (6 credits). A survey of the history of Ireland from the pre-Norman period to the present day. The emphasis will be placed on political developments, but these will be considered in the light of their social, economic and intellectual background. The first term will cover the period up to 1688.
Professors Maxwell and Senior

101-215A MEDIEVAL AND RENAISSANCE EUROPEAN HISTORY. (3 credits). The medieval period and its typical institutions: the Empire, the Papacy, feudalism, the guild, the dynastic states. The development of an urban civilization in Italy and similar developments in northern Europe associated with the Renaissance. This course and its sequel (101-217B) provide a preparation

for the study of European history. (Not open to students who have taken History 101-215D).
Professor Vogel

101-217B MODERN EUROPEAN HISTORY. (3 credits; Prerequisite: History 215A,B, or consent of instructor). The Reformation, the birth of modern institutions, the beginnings of modern science and the Enlightenment, nationalism, the rise of democracy, European industrialization and the European state system from 1815 to 1939. This course, in conjunction with 101-215A,B, should provide preparation for a study of European History. (Not open to students who have taken History 101-215D).
Professor Vogel

101-218B THE DEVELOPMENT OF EAST ASIAN CIVILIZATION SINCE 1800. (3 credits). History and salient features (social, political, economic, and intellectual) of China and Japan in the nineteenth and twentieth centuries. This course provides a preparation for the study of East Asian history. (Not open to students who have taken History 101-208D).
Professor Ota

101-221B THE UNITED STATES SINCE 1865. (3 credits. Prerequisite: History 211A or consent of instructor). The growth of industry, reconstruction, populism and progressivism, World War I, the New Deal, and World War II. Stress is placed on the political and social consequences of industrialization and urbanization.
Professor Randall

101-225A A HISTORY OF FRANCE TO 1789. (3 credits). A survey of French society from the fall of the Roman Empire to the outbreak of the French Revolution, with particular emphasis on the construction of the French state in the medieval period, the religious conflicts of the sixteenth century, the social and economic structure of absolutism, and the intellectual and economic changes of the eighteenth century. (Not open to students who have taken History 101-225D).
Professor Boulle

101-226B EASTERN EUROPE IN THE TWENTIETH CENTURY. (3 credits). A survey of the significant developments in Central and Eastern Europe, from the outbreak of the First World War and the collapse of the Habsburg Empire to the present: The rise of nationalism and the emergence of new nation states, the fatal consequences of Versailles, the coming of the Second World War, and the occupation of Eastern Europe and the Balkans.
Staff

- **101-227B A HISTORY OF FRANCE FROM 1789.** (3 credits. Prerequisites: History 225A or consent of instructor). A study of the development of France from the Revolution to the present with special emphasis on social, religious and intellectual history. (Not open to students who have taken History 101-225D).
Professor Hellman

101-235D A SURVEY OF GERMAN HISTORY. (6 credits). This course will give an overview of German history from its beginnings to the present. Selected aspects will be dealt with in depth; the foundations of the medieval Empire; the Reformation; the era of the World Wars. The course is an introduction to the entire field and will include some discussion of historiography.
Staff

- **101-236D HISTORY OF RUSSIA TO THE EARLY 20th CENTURY.** (6 credits). The formation of the Kievan state, the Mongol occupation, the emergence and integration of the Muscovite state, the Petrine reforms, the "modernization" of Russia, the evolution of imperial Russian society. Emphasis is placed on the diverse interpretations of social, political, and intellectual themes in Russian history. (Not open to students who have taken 101-306A or 306D).
Professor Boss

101-237A HISTORY OF THE JEWS FROM THE RISE OF WEST EUROPEAN JEWRY TO 1666. (3 credits). This course will focus on the experience of the Jews in Western Christendom, including the Iberian peninsula. Topics discussed will include legal, ethical and philosophical trends and schools, the development of communal institutions, the Jews and the Church, and demographic and occupational patterns and changes. (Not open to students who have taken History 101-207D).
Professor Hundert

- **101-239B HISTORY OF SCIENCE – FROM BACON TO NEWTON AND LEIBNIZ.** (3 credits). The development of scientific ideas from Francis Bacon and his contemporaries on the Continent to the foundation of the Royal Society and the Newtonian synthesis. The main emphasis will be on Newton and the activities of his disciples and opponents, including Leibniz, Boscovich, Lomonosov, and the early popularizers of Newtonianism in France, Italy, and Germany. (Not open to students who have previously taken 101-439A).
Professor Boss

- **101-247B HISTORY OF THE JEWS FROM 1666 TO THE PRESENT.** (3 credits). This course will provide an overview of modern Jewish history. Emphasis will be placed on the continuing and varied responses to the political, economic, demographic and ideological changes during the past three centuries. (Not open to students who have taken History 101-207D).
Professor Hundert

- **101-249B HISTORY OF SCIENCE: FROM NEWTON TO THE END OF THE 18th CENTURY.** (3 credits). This course will deal with the consequences of the Scientific Revolution, with particular emphasis on Newton and his successors (Voltaire,

Algarotti, d'Alembert, Leibniz, Christian Wolff, Lomonosov), as well as on the role of scientific societies during the Enlightenment.
Professor Boss

101-300D THE SECOND WORLD WAR (1939-1945). (6 credits; Preequisites: Survey of European History or International Relations). An overall view of the Second World War, including the international crisis (1919-1939) and the outbreak of war; early campaigns; 1941: world war – the darkest hour; 1942 – "the hinge of fate": Midway, El Alamein, Stalingrad; the warfare states: internal structures; total war and mass murder; traditional and radical solutions: tanks and atomic bombs; the politics of victory and the end of European empire.
Professor Vogel

101-302B CANADIAN BUSINESS HISTORY. (3 credits). The history of business in Canada: evolution of business structure and function; development of the firm by sector and by geographical size and origins; growth of markets and marketing; transformations in accounting; technological change; professionalization of management; labour; government relations; the social nature and linkages of business. Where appropriate, comparative attention will be paid to the foreign business experience.
Professor Young

101-303A INDUSTRIALIZING QUÉBEC, 1840-1914. (3 credits; Prerequisite: History 202A and 203B or consent of instructor. A reading knowledge of French is required). The course will examine the major structural changes in the society and economy of Québec during a period of industrialization. (Not open to students who have previously taken 101-313D).
Professor Young

- **101-304D BRITISH IMPERIAL POLICY FROM 1783.** (6 credits; Prerequisite: Any course in British or Colonial history or consent of the instructor). The composition and development of British policy, stressing the interplay between domestic attitudes and imperial needs and opportunities as demonstrated in humanitarian, missionary, intellectual, economic and strategic interest.
Professor Senior

101-305D WAR AND SOCIETY IN MEDIEVAL AND MODERN EUROPE. (6 credits. Prerequisite: one general course in European history is desirable). War in Roman, Carolingian, and feudal society; rise of permanent armies and navies; military institutions of eastern Europe; warfare from Wallenstein to Napoleon; emergence of the national army in Russia; the Western military tradition after Clausewitz; the Communist doctrine of war.
Staff

- **101-306A THE SOVIETIZATION OF EAST CENTRAL EUROPE: INTEGRATION AND RESISTANCE.** (3 credits; Prerequisite: History 101-226A or 226B). The motives and methods of the Soviet take-over of East Central Europe from 1944. The introduction of Stalinist models (collectivization, industrialization, purges, etc.) and their relative effectiveness; Yugoslavia's defection; the implications of de-Stalinization; the rebellions of 1956 in Poland and Hungary; the Dubvek experiment; COMECON and other integrating institutions; the background to contemporary events in Poland. (Not open to students who have taken History 101-246B).
Staff

101-307D THE HISTORY OF THE JEWS IN POLAND, c. 1100-1945. (6 credits; Prerequisite: History 207D or permission of instructor). The course will include analyses of primary sources (in translation) related especially to the social, economic and institutional history of the Jews in Poland and their place in the East European Jewish community. Topics to be discussed: the Jews during "The Flood" (1648-1667), the communal crisis of the late 17th century, the Frankist movement, and Hasidism.
Professor Hundert

101-308D HISTORY OF CHINA. (6 credits). A survey course in the history of China from earliest times to 1911 with particular attention to social, intellectual and institutional change.
Professor Laffey

- **101-310D TOPICS IN LATIN AMERICAN HISTORY.** (6 credits). This is a survey course in its chronological scope, but it will concentrate on the social, cultural, and economic aspects of Latin American civilization from the pre-industrial through the modern period. The topical rather than purely chronological approach is intended to provide latitude for both the general student and the more specialized.
Professors Echenberg and Randall

101-311A THEODORE ROOSEVELT AND THE PROGRESSIVE ERA. (3 credits; Prerequisite: History 211A and 221B or consent of instructor). The origins, life and decline of American Progressivism (1890-1920) against a background of rapid industrial growth, imperialism, war and "normalcy". Emphasizing the philosophy and ambitions of Theodore Roosevelt, stress is on Progressivism's political goals in cities and states, its historiography and its permanent legacy. (Not open to students who have previously taken History 101-331D).
Professor Riggs

- **101-312B EAST AND CENTRAL EUROPE 1453-1740.** (3 credits). A survey of the principle developments from the fall of Constantinople to the accession of Maria Theresa: The Ottoman impact; the Renaissance in Hungary and Poland; the emergence of the Hapsburg Empire; the Reformation and Counter-Reformation; the Thirty

Years' War; the imposition of serfdom; the decline of Poland-Lithuania and the collapse of the Ottoman system. The peculiar significance of East Central Europe as a frontier region between Catholicism, orthodoxy and Islam will also be considered. (Not open to students who have previously taken History 101-206D and/or 101-206A/B).
Staff

- **101-313B EAST AND CENTRAL EUROPE 1740-1914.** (3 credits). A survey of continuities and changes. The influence of the Enlightenment and of revolutionary ideas; the partitions of Poland; the creation of independent Balkan states; the struggle to maintain the multinational Hapsburg Empire; the emancipation of the serfs; the impacts of industrialization and modernization; and the origins of World War I. (Not open to students who have previously taken History 101-206D and/or History 101-206A,B).

101-314D TUDOR AND STUART ENGLAND. (6 credits; Prerequisite: History 204D or consent of the instructor). A study of English society, politics, and thought from the end of the Middle Ages to the eighteenth century. Among the topics discussed are the developments of the English state: economic expansion; the religious revolution; the civil war and its consequences; the intellectual and social changes.
Professor Maxwell

101-315D WESTERN EUROPE FROM THE FRENCH REVOLUTION TO THE 20th CENTURY. (6 credits; Prerequisite: any course in European history, or consent of instructor). This course will be devoted to a study of major developments in the 19th and early 20th centuries. Special emphasis will be given to revolutionary movements, the rise of the working classes, economic and social change, liberalism, nationalism, socialism, imperialism and the European balance of power.
Staff

101-316A RUSSIA IN THE TWENTIETH CENTURY – UP TO 1929. (3 credits). A survey of Russian and Soviet history from the 'revolution' of 1905, the collapse of constitutionalism, Bolsheviks, Mensheviks, and the First World War, the fall of the tsarist regime, the Revolution of 1917, civil war and intervention, Lenin and the Comintern, Marxism and Soviet culture, the industrialization debate, Trotsky and the rise of Stalin. (Not open to students who have previously taken History 101-216A or 101-326D).
Professor Boss

101-318D A HISTORY OF JAPAN. (6 credits). A survey course in the history of Japan from the transmission of Buddhism (552 A.D.) to the 20th century, with particular attention to Modern Japan.
Professor Ota

101-320A THE HISTORY OF EUROPEAN THOUGHT FROM THE RENAISSANCE TO THE ENLIGHTENMENT. (3 credits). This course begins with the Renaissance and entails the study of various trends in European thought to the 18th century. It is conducted primarily by means of discussion based on extensive reading in the sources – Erasmus, Luther, Descartes, Pascal and Voltaire – and seeks an empathic understanding of each thinker as well as a grasp of the historical context, and influence, of his thought. (Not open to students who have previously taken History 101-405D).
Staff

101-321B THE HISTORY OF EUROPEAN THOUGHT FROM THE ENLIGHTENMENT TO THE 20th CENTURY. (3 credits). This introduction to modern European intellectual history entails an analysis of readings in Rousseau, Goethe, Comte, Marx, Nietzsche. (Not open to students who have previously taken History 101-405D).
Staff

- **101-322B CANADA AND THE AMERICAN PRESENCE SINCE 1939.** (3 credits; Prerequisite: History 202A and 203B or consent of instructor). An examination of Canada's relationship with the United States in the modern era. Emphasis will be placed upon diplomatic, military, cultural, and economic facets of this relationship.
Professor Thompson

101-324B THE BYZANTINE EMPIRE. (3 credits). The Byzantine State and the Orthodox Christian Church: ideological, cultural, commercial and social aspects; the Empire's relations with her neighbours and with the emerging Republic of Venice.
Staff

101-325D WESTERN EUROPE FROM THE RENAISSANCE TO THE 18TH CENTURY. (6 credits; Prerequisite: A course in pre-nineteenth century European history or consent of instructor). A study of the development of political and social institutions, religion and culture, e.g. the Italian communes and principalities; humanism, the Reformation; the scientific revolution of the 18th century; the changing character of social classes, the development of absolutism; the critical thought of the 18th century.
Professor Boulle

- **101-326B RUSSIA IN THE TWENTIETH CENTURY, 1929-1979.** (3 credits). The rise of Stalin, collectivization and the purges, Stalin and the Comintern, Nazi-Soviet relations and the Second World War, the changes in Soviet society after Stalin; the twentieth Party Congress, the demise of Khrushchev and the accession of Brezhnev. (Not open to students who have previously taken History 101-216A or 101-326D).
Professor Boss

- **101-327B JEWS IN THE ORBIT OF ISLAM.** (3 credits; Prerequisites: History 207D or consent of instruc-

tor). Overview of the history of the Jews in the Islamic world from 622 to the present. Emphasis on the classical period (to 1250), and on institutional and cultural themes. Some comparative perspectives will be offered on the experience of Jews and other minorities under Islam.
Professor Hundert

101-328A CONTINUITY AND CHANGE IN CHINA, 1841-1911. (3 credits; Prerequisite: One previous course in Chinese or Asian history). This course will examine the transformation of China under the impact of western penetration from the Opium War to the Republican revolution of 1911. Emphasis on the nature of reform and revolutionary movements in that era.
Professor Laffey

101-330D CONSTITUTIONAL HISTORY OF ENGLAND. (6 credits). History of the British Constitution from Saxon origins until the 19th century. This course is open to all and designed to provide background for those preparing for law school and those in need of British background for the study of Canadian institutions.
Professor Senior

101-331B F.D. ROOSEVELT AND THE NEW DEAL. (3 credits; Prerequisite: History 211A and 221B or consent of instructor). The era of Franklin Roosevelt (1933-1945) with particular emphasis upon roots, goals, methods and the historiography of the New Deal. Political leadership, both domestic and foreign, will also be stressed. (Not open to students who have previously taken History 101-331D).
Professor Riggs

101-333A SOCIAL AND ECONOMIC HISTORY OF NEW FRANCE. (3 credits; Prerequisite: History 202A/203B or consent of instructor). This course will study the colonial economy, the movements of population, the basic institutions and the social structure in New France.
Professor Dechêne

• **101-336D A HISTORY OF FRANCE SINCE 1789.** (6 credits). A study of the major social, political, and cultural changes which France has undergone since the Revolution. Special emphasis will be placed on the struggle between religious and anticlerical (or anti-religious) forces in the nineteenth century, on the history of revolutionary movements of the Left and of the Right, and on the transformations of these phenomena in the contemporary period.
Professor Hellman

101-338B REPUBLICAN CHINA, 1911-1949. (3 credits; Prerequisite: One previous course in Chinese or Asian history). Social, intellectual and political changes in China from the Republican revolution to the establishment of the People's Republic of China. It will concentrate on aspects of the May Fourth Movement and the historical roots of the modern revolution.
Professor Laffey

• **101-341A THEMES IN U.S. SOCIAL AND ECONOMIC HISTORY, 1800-1877.** (3 credits; Prerequisite: History 101-211A or consent of instructor). The social and economic developments of the United States during the Jacksonian and Civil War eras. Topics include: industrialization, urbanization, migration, slavery and race relations, and the labour movement. (Not open to students who have previously taken History 101-341D).
Professor Randall

101-342A THE HISTORY OF CANADA'S EXTERNAL RELATIONS: 1867-1939. (3 credits; Prerequisite: History 202A and 203B). This course will examine the historical development of Canadian external relations before World War II. Particular emphasis will be placed on Canadian-American relations, Canadian-Imperial relations, the growth of Canadian diplomatic autonomy and participation in the League of Nations.
Professor Miller

101-343B IDEAS AND METHODS IN CANADIAN HISTORY. (3 credits; Prerequisite: History 202A/203B or consent of instructor). This course will present general views on historical methods drawing illustrations from recent techniques in Canadian historiography.
Professor Dechêne

101-344B THE RISE OF POLICE INSTITUTIONS IN BRITAIN AND THE COMMONWEALTH. (3 credits; Prerequisite: One course in British, Canadian or American history). Deals with the origins of law enforcement from Saxon juries through Norman justices of the peace, to Scotland Yard and the London Metropolitan police. Special attention will be given to the Royal Irish Constabulary and its influence on the growth of rural police in Commonwealth countries.
Professor Senior

101-348D JAPAN AND THE WEST. (6 credits; Prerequisite: Permission of instructor). Interaction of Japan and the West from the mid-sixteenth century. Focus on the Western impact upon the intellectual, political, economic and social development of Japan from the mid-eighteenth century. Attention given to the composition and function of the "cultural mediators" – for example, Japanese pioneers of the Western studies, the foreign employees (mostly British) of the Japanese government, and Christian missionaries (predominantly from the United States). (Not open to students who have previously taken 101-418D).
Professor Ota

101-349A HEALTH AND THE HEALER IN WESTERN HISTORY. (3 credits; Prerequisite: consent of instructor). This course traces the natural history of health and disease and the development of the healing arts, from antiquity to the beginning of

modern times, focussing on that group of cultures which gave rise to "western" medicine. Use of a sociological and anthropological perspective invites students to see health and healing as gradually evolving aspects of society and culture.
Professor Weisz (of the Department of Humanities and Social Studies in Medicine).

101-351A THEMES IN U.S. SOCIAL AND ECONOMIC HISTORY, 1877-1960. (3 credits; Prerequisite: History 101-221B or consent of instructor). Aspects of American social and economic history from the Gilded Age through the Cold War era. Emphasis on industrialization and its impact on American life and institutions. Topics include: the labour movement, immigration, the family, education, religion, the professions, and race relations. (Not open to students who have previously taken History 101-341D).
Professor Randall

101-352D EMERGENCE OF ENGLISH CANADA, 1791-1867. (6 credits; Prerequisite: History 202A and 203B or consent of instructor). This course will be primarily concerned with the history of Upper Canada from its pioneer origins until Confederation. Special consideration will be given to immigration, urbanization and to relations with French Canada after the Union of 1841.
Professor Senior

101-355D GERMANY 1806-1918. (6 credits; Prerequisite: History 235D or a European survey course or consent of the instructor). German political, constitutional and social history 1806-1918. Emphasis: Reform Era and Industrialisation; the evolution of Prussian hegemony; fin de siècle; imperialism; alliances and commitments; crises; the Great War.
Professor Hoffman

- **101-356B THE HABSBURGS IN EASTERN EUROPE 1526-1918.** (3 credits; Prerequisite: a course in European, Russian or Ottoman history or by permission of the instructor). The expansion of the Habsburgs into Eastern Europe through the acquisition of Bohemia and Hungary;the Ottoman onslaught and the ensuing internal rebellions; the Counter-reformation and the Polish partition; nationality problems in the multinational state; attempts to satisfy national aspirations within a federal context; the collapse of the Austro-Hungarian Empire at the end of the First World War.

101-359B MEDICINE, POLITICS, AND SOCIETY SINCE 1789. (3 credits; Prerequisite: Permission of instructor. Also available to first-year medical students in their options program). The development of medical institutions since 1789 including the historical development of the healing professions, the hospital, medical ethics, the role of women as healers and medical consumers and the rise of socialized medicine. Different national experiences including Canada's Medical issues and institutions will be viewed in terms of the social and political conditions from which they arose.
Professor Weisz (of the Department of Humanities and Social Studies in Medicine)

101-362B THE CANADIAN WEST 1870-1970. (3 credits; Prerequisite: History 101-202A and 101-203B or consent of instructor). An examination of British Columbia and the Prairie Provinces. Emphasis on social and economic development and on the relationship of the regions to Central Canada. (Not open to students who have previously taken History 101-362D).
Professor Fisher

101-363D CONTEMPORARY CANADA, 1890-1970. (6 credits; Prerequisite: History 202A and 203B or equivalent, or consent of instructor). This course will study Canadian social and political development since 1890, with emphasis on reform movements, third party protest, urbanization, regionalism, war, foreign policy (notably Canadian-American relations) and the Quiet Revolution.
Professor Miller

101-380D MEDIEVAL LIFE AND INSTITUTIONS. (6 credits). The history of the Middle Ages is approached in terms of its typical institutions - the Church, the Holy Roman Empire, feudalism, the towns, the guilds, the representative system - with an analysis of the social groups attached to each. The crisis which modified these institutions in the late Middle Ages are analysed as phases of the transition to the modern period of European history. (Not open to students who have taken History 101-280D).
Professor Partner

101-401A TOPICS IN MEDIEVAL CULTURE AND SOCIETY. (3 credits; Prerequisites: History 101-215D or 101-215A or 101-280D or consent of instructor). This course will be addressed to those students who already have some preliminary background in early European history. The course will consist of four topics in medieval history, culture, and institutions, such as: the origins and evolution of Chivalry, medieval kingship, the writing of history, the status of women, monks and monasteries, the development of parliaments. Each topic will be examined through a reading of primary sources supplemented by modern scholarly works. The exact content of the course will change from year to year.
Professor Partner

- **101-414D GREAT BRITAIN FROM THE LATE VICTORIAN PERIOD.** (6 credits; Prerequisite: History 204D or consent of the instructor). This course examines the period after 1867, with particular emphasis on the changing character of party politics, social and economic development, the

growth of the welfare state, and the impact of imperialism and war.
Professor Petter

- **101-415D CONTEMPORARY FRENCH INTELLECTUAL HISTORY.** (6 credits). This study will survey selected twentieth century developments: Durkheim and the Positivist tradition, the socialisms of Jaurès and Péguy, the *Action Française,* Bergson and the Catholic revival, the evolution of French Marxism, Mounier and the Personalists, the National Revolution of Vichy, Gaullism and Malraux, Existentialism, Christian-Marxism, the Structuralists.
Professor Hellman

- **101-420D FORMS OF PROTEST IN TRADITIONAL CHINA.** (6 credits; Prerequisite: One prior course in Chinese history). An examination of the ideological and social roots and the forms of expression of protest in traditional China, at both the elite and popular levels. *This course will be given in alternate years.*
Professor Laffey

- **101-423B POPULAR UNREST IN PRE-INDUSTRIAL SOCIETIES: THE CASE OF LOWER CANADA.** (3 credits; Prerequisite: One general course in early Canadian, British or French history). This course will examine forms of popular resistance and protest in Europe and America from the 17th to the early 19th century, as background for an analysis of the rebellions of 1837-38 in Lower Canada. Particular emphasis will be placed on the economic conditions in rural and urban areas and the nature of social relations.
Professor Dechêne

- **101-425A EARLY MODERN FRANCE TO 1661.** (3 credits; Prerequisites: Medieval or Early Modern general European survey, or French national survey, or consent of instructor. A reading knowledge of French is essential). The Renaissance in France and the emergence of the "new" monarchy; spread of Protestantism and civil disorders in the sixteenth century; the Catholic Reformation; nobiliar and popular unrest in the seventeenth century; the rise of absolutism and the emergence of classical culture. (Not open to students who have previously taken History 101-345D).
Professor Boulle

- **101-426B EARLY MODERN FRANCE, 1661-1789.** (3 credits; Prerequisites: History 425A, or Early Modern general European survey, or French national survey, or consent of instructor. A reading knowledge of French is essential). Absolutism under Louis XIV; economic developments and the rise of the bourgeoisie; the realignment of the nobility; the Enlightenment; the "feudal" reaction and the origins of the French Revolution. (Not open to students who have previously taken History 101-345D).
Professor Boulle

- **101-427A THE HASIDIC MOVEMENT.** (3 credits; Prerequisites: History 307D or consent of instructor). A historical examination of the history of the Hasidic Movement from its beginnings in eighteenth-century Poland to the present. Although emphasis will be placed on the social history of the movement, doctrinal developments will be examined as well.
Professor Hundert

- **101-430D FRANCE AND THE AFRICANS: A HISTORY OF THEIR RELATIONS FROM 1700 TO THE PRESENT.** (6 credits; Prerequisite: An introductory course in either African or French history, and a reading knowledge of French). An advanced study of the reciprocal nature of contacts between France and Africa south of the Sahara, the course will stress such topics as the slave trade, African resistance to French conquest, colonial rule and its legacy.
Professor Echenberg

- **101-432D HISTORY OF THE ATLANTIC PROVINCES.** (6 credits; Prerequisite: History 202A/203B or consent of the instructor). An examination of themes in the history of the Atlantic Provinces from 1713 to the entrance of Newfoundland into Confederation in 1949. The course will consider both the internal historical development of the region and maritime responses to developments in Canada and the United States.
Professor Miller

- **101-435D GERMANY IN THE 20th CENTURY.** (6 credits; Prerequisite: History 235D or a European survey course or consent of instructor). First World War: national and international aspects; another revolution arrested; unsolved problems; Weimar: economic crisis, frustrated energies, and nationalism; rise of Hitler; structure of the National Socialist state; blue-print for World Power; Second World War; attempts to overthrow Hitler; the revolt of conscience; defeat and division; the Cold War and the question of German unity; the two German states in the post-War era.
Professor Hoffmann

101-436A TOPICS IN EAST EUROPEAN HISTORY. (3 credits; Prerequisite: Permission of instructor). Topic for 1982-83: the industrialization of Eastern Europe.
Staff

- **101-438D HISTORICAL THEMES IN THE PEOPLE'S REPUBLIC OF CHINA.** (6 credits; Prerequisite: One university level course in Chinese history). The transformation of China's society and economy and of Chinese institutions and ideas since 1949, with special reference to the dynamics of phased transition, both in conceptual approach and in actual practice. (Not open to students who have previously taken History 101-368D).

101-441A THE BEGINNINGS OF INDUSTRIAL SOCIETY IN CANADA. (3 credits; Prerequisites: History 202A and 203B or consent of instructor).

The beginnings of industrialization in Canada, before Confederation, with emphasis on theories of economic development and underdevelopment, the comparative experience of early industrialization, and the essentially social nature of the economic process. Economic function of social institutions; work structures and disciplines; class and capital formation; popular movements. (Not open to students who have previously taken History 101-442d).
Professor Rice

- **101-442A INDUSTRY AND SOCIAL CHANGE IN CANADA.** (3 credits; Prerequisites: History 202A and 203B or consent of instructor). The economic and social transformations of industrialization in post-Confederation Canada. Topics include the economic function of the state, corporate growth and concentration, work and living conditions, labour, popular movements, regional disparity, and the impact of war. (Not open to students who have previously taken History 101-442D).
Professor Rice

- **101-458D PROBLEMS IN TRADITIONAL CHINESE HISTORY.** (6 credits; Prerequisite: History 308D or the equivalent, or consent of the instructor). Topic will change from year to year.
Professor Laffey

HISTORY 101-417D, 461D, 472D, 474D, 476D, 477D, 479D, 480D, 481D, 482D, 483D, 484D, 485D, 486D, 488D, 489D, 490D, 491D, 493D, 494D, 495D, 496D, 497D, 499D. Honours Subjects and Seminars.

101-001 HISTORY AND HISTORICAL STUDIES. (Non-credit optional series of lectures). A series of lectures by the members of the Department devoted to the place of history in the social sciences, the methodology of historical studies and the relation of history to the humanities and to the sciences. Lectures will be primarily designed for Upper year Honours students in History – but lectures will be open to interested students.
Members of the Department

Honours Seminars

- **101-417D SEMINAR: TRADITION AND CHANGE IN CHINA.** (6 credits; Prerequisite: History 208D or 208A and 218B or 308D. Open only to East Asian Studies Honours students. History Honours students register under the course number 101-497D).

101-461D SEMINAR: TOPICS IN MODERN AMERICAN SOCIAL HISTORY. (6 credits. Prerequisite: Any course in American History or consent of instructor).
Professor Randall

101-472D SEMINAR: ECONOMY AND SOCIETY IN BRITISH NORTH AMERICA 1760-1867. (6 credits).
Professor Dechêne

- **101-474D SEMINAR: ENGLISH HISTORY, 1688 to 1870.** (6 credits).
Professor Senior

- **101-476D SEMINAR: THE RUSSIAN REVOLUTION IN COMPARATIVE PERSPECTIVE.** (6 credits).
Professor Boss

101-477D SEMINAR IN JEWISH HISTORY. (6credits).
Professor Hundert

101-479D SEMINAR: HISTORY OF SCIENCE. (6 credits; Prerequisite: Permission of instructor). The development of scientific ideas in the 17th and 18th centuries, with particular emphasis on Newton and Leibniz, and their influence during the Enlightenment.
Professor Boss

- **101-480D SEMINAR: CAPITALISM AND EMPIRE: THE WORLD IN THE AGE OF EUROPEAN DOMINATION.** (6 credits).
Professors Boulle and Echenberg

- **101-481D SEMINAR: UNITED STATES IN THE COLONIAL ERA.** (6 credits).
Professor Riggs

- **101-482D SEMINAR: THE CHURCH AND THE WORLD: ANTIQUITY TO REFORMATION.** (6 credits).
Professor Partner

101-483D SEMINAR: THE HISTORYOF MONTREAL. (6 credits; Prerequisites: History 202A and 203B and other courses on French Canada or consent of instructor).
Professors Rice and Young

- **101-484D SEMINAR: TOPICS IN MODERN BRITISH HISTORY.** (6 credits). (Not open to students who have taken 101-478D).
Professor Petter

101-485D SEMINAR: THE NORTH ATLANTIC WORLD IN THE REIGN OF GEORGE III. (6 credits).
Professor Senior

- **101-486D SEMINAR: AFRICA AND THE TWO WORLD WARS.** (6 credits).
Professor Echenberg

- **101-488D SEMINAR: MODERN FRENCH INTELLECTUAL HISTORY.** (6 credits).
Professor Hellman

101-489D SEMINAR: PROBLEMS IN GERMAN HISTORY IN THE 20th CENTURY. (6 credits).
Professor Hoffmann

101-490D HONOURS TUTORIAL. (6 credits).

101-491D HONOURS TUTORIAL. (6 credits).

101-493D SEMINAR: TOPICS IN CANADIAN SOCIAL HISTORY. (6 credits).
Professor Fisher

- **101-494D SEMINAR: POLITICAL AND SOCIAL IDEAS IN TUDOR AND STUART BRITAIN.** (6 credits).

Professor Maxwell

101-495D SEMINAR: EARLY MODERN EUROPE. (6 credits). Topic for 1982-83: The nobility in early modern Europe: order, class or elite?
Professor Boulle

- **101-496D SEMINAR: REVOLUTIONARY MOVEMENT IN RUSSIA IN THE NINETEENTH CENTURY.** (6 credits).

- **101-497D SEMINAR: TRADITION AND CHANGE IN CHINA.** (6 credits; Prerequisite: History 208D, 208 and 218B and 308D or consent of the instructor.
Staff

101-499D SEMINAR: THE WRITING OF HISTORY: CLASSICAL ANTIQUITY TO THE EIGHTEENTH CENTURY. (6 credits).
Professor Partner

The following course(s) may be chosen by History Major and Honours students as part of their programs:

Jewish Studies

135-356D JEWISH LABOUR MOVEMENT. (6 credits).

Centre d'Études Canadiennes Françaises

157-200A INTRODUCTION TO QUÉBEC SOCIETY. (3 credits).

157-220A INTRODUCTION À L'HISTOIRE DE LA SOCIÉTÉ QUÉBECOISE. (3 crédits).

157-230B INTRODUCTION À L'HISTOIRE CULTURELLE DU QUÉBEC (19e-20e s.). (3 crédits).

Islamic Studies

- **397-510D HISTORY OF ISLAMIC CIVILIZATION: THE CLASSICAL PERIOD.** (6 credits).

397-511D HISTORY OF ISLAMIC CIVILIZATION: THE MEDIEVAL PERIOD. (6 credits).

HISTORY AND PHILOSOPHY OF SCIENCE PROGRAM

M.J. DUNBAR (Oceanography, Chairman); V. BOSS *(history);* P. EAKINS *(Geological Sciences);* J. FOSSEY *(Classics);* M. GOPNIK *(Linguistics);* R. KROHN *(Sociology);* J. LAMBEK *(Mathematics);* B. MARCOTTE *(Oceanography);* J.A. McGILVRAY *(Philosophy);* T. PAVLASEK *(Electrical Engineering);* B. RATTRAY *(Mathematics);* R. SATTLER *(Biology);* V. SAULL (Geological Sciences); W. SHEA *(Philosophy);* P. TEIGEN *(Osler Library);* P. WALLACE *(Physics);* B. WEEMS *(English);* H. WRIGHT *(Economics).*

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Tel: 392-5714

History and Philosophy of Science at McGill is an interdisciplinary B.A. program that aims at providing students from the Faculties of Arts and Science with the opportunity of studying the development of science and discussing the nature of the scientific method and the impact of science and technology on society.

MAJOR PROGRAM

There is no prerequisite for admission into the Major program in History and Philosophy of Science. The program requires that the student take 30 credits in History and Philosophy of Science of which 3 must be "advanced courses" (400 level), and 24 credits in no more than three fields usually in the physical, biological, or social sciences to be determined with the program adviser.

All students who wish to Major in the History and Philosophy of Science must register with the Major's Advisers. Further information may be obtained from Professor Valentin Boss (History), 392-5184, Professor William R. Shea (Philosophy), 392-4517, and Professor Philip Wallace (Physics), 392-4724.

HONOURS PROGRAM

Honours students are expected to take a minimum of 42 credits in History and Philosophy of Science. These must include 5 of the following courses: 107-220A, 107-221B, 107-324A, 107-325B, 107-504A, 107-505B, 107-590A, 107-591B, 101-239A, plus 2 tutorial seminars. Each student has the opportunity to construct within the Honours program a concentration focussed on a particular field of interest, such as The Scientific Revolution in the 17th Century, The Rise of the Mechanical Philosophy, Newtonian Science, Scientific Institutions in the 17th and 18th Centuries.

Students who wish to register in the Honours program should consult with Professor WilliamR. Shea, (Philosophy) 392-4517 or Professor Valentin Boss (History) 392-5184.

Course Descriptions

Consult departmental listings for more complete descriptions. Not all courses are available in any given year.

ANTHROPOLOGY

151-358A Introduction to Research. (3 credits).
151-359A History of Archeological Theory. (3 credits).

BIOLOGY

177-246A Modern Biology and the Predicament of Man. (3 credits).
177-346A Philosophie de la biologie. (3 credits).
177-347B History of Biology. (3 credits).

HISTORY

101-239B History of Science from Bacon to Newton and Leibniz. (3 credits).
101-249B History of Science from Newton to the End of the 18th Century. (3 credits).
101-349A Health and the Healer in Western History. (3 credits).
101-359B Medicine, Politics, and Society Since 1789. (3 credits).
101-479D Seminar: History of Science. (6 credits).

MATHEMATICS

189-338B Topics in the History and Philosophy of Mathematics. (3 credits).

PHILOSOPHY

107-220A Introduction to History and Philosophy of Science, Part I. (3 credits).
107-221B Introduction to History and Philosophy of Science, Part II. (3 credits).
107-321D Philosophy of Science and Technology. (6 credits).
107-322D Method and Metaphysics in the Scientific Revolution. (6 credits).
107-324A Philosophy of Social Science I. (3 credits).
107-325B Philosophy of Social Science II. (3 credits).
107-326A The Cultural Impact of Technology. (3credits).
107-332A Philosophyof Religion. (3 credits).
107-502A Metaphysics I. (3 credits).
107-503B Metaphysics II. (3 credits).
107-520A Seminar in History and Philosophy
107-521B of Science. (3 credits each).
107-526A Science and Philosophy in the 17th Century I. (3 credits).
107-527B Science and Philosophy in the 17th Century II. (3 credits).
107-590A Seminar in Philosophy. (3 credits).
107-591B Seminar in Philosophy. (3 credits).

PHYSICS

198-200A Ideas and Concepts of Modern Physics I. (3 credits).
198-201B Ideas and Concepts of Modern Physics II. (3 credits).
198-204A,B Planets, Stars and Galaxies. (3 credits).
198-224A Physics and Psychophysics of Music. (3 credits).

PSYCHOLOGY

204-403A Modern Psychology in Historical Perspective. (3 credits).

RELIGIOUS STUDIES

260-340B Religion and the Sciences. (3 credits).

SOCIOLOGY

166-219A Sociology of Innovation and Cultural Change. (3 credits).
166-225B Medicine and Health in Modern Society. (3 credits).
166-325B Sociology of Science. (3 credits).

HUMANISTIC STUDIES

Director: Professor Davison
English Department
853 Sherbrooke St. West
Montreal, Québec H3A 2T6

Two kinds of students can benefit from the Humanistic Studies Program. The first, students who have not yet made decisions as to their final course of study at McGill can range over a broad area of fields and disciplines within the context of the general requirements. The second, students who know precisely what few areas of study they wish to specialize in, but cannot find any appropriate program at McGill; within the context of Humanistic Studies, such students can select, from a small number of disparate areas of study, those courses most amenable. The structure of the program is flexible, with a variety of courses available to satisfy each of the categories required. These categories are the following:

18 credits in one language other than French or English (ancient: Greek, Latin; modern: Arabic, Chinese, German, Greek, Hebrew, Italian, Japanese, Russian, Spanish)

6 credits in Social Science (Anthropology, Economics, Geography, History, Political Science, Psychology, Sociology).

30 credits in no more than three humanities departments (Languages other than the one already chosen; Art History, Classics, English, French, History, Jewish Studies, Music, Philosophy, Religious Studies).

A special interdisciplinary course, Themes in the Humanities, is also available to students in the program. The themes change from year to year, but each is taught by a team of faculty members drawn from different departments, the better to

demonstrate how the contrasting methods and aims of different disciplines complement each other.

Notes: The program is being revised and new courses created. Students already enrolled in Humanistic Studies may complete their degrees under either the old or the new program, but students entering Humanistic Studies for the first time must fulfill the requirements of the new major. *No one may enter the program after completing U2.* A more up-to-date and detailed description of the program should be available by early July from the English Department Office, Room 155, Arts Building.

INDUSTRIAL RELATIONS STUDIES PROGRAM

Advisers: Sociology Option – Professor Anthony Masi, Room 826, Leacock Building, 392-5180; Professor Michael Smith, Room 735, Leacock Building, 392-5180; *Economics Option* – Professor Sidney H. Ingerman, Room 419, Leacock Building, 392-5238; Professor L. Soderstrom, Room 427, Leacock Bldg., 392-5234.

The Industrial Relations Major is designed for undergraduate students who wish to earn a B.A. degree with a concentration of courses chosen from various disciplines that are related to Industrial Relations. The main economic and social forces which affect the employer-employee relationship are examined in a theoretical and practical setting. Students may choose from a wide range of courses in either the Economics or the Sociology option in deciding how they will constitute their programs. The Faculty of Management offers a similar Major, leading to the B. Com degree.

Notes: For a more up-to date and detailed description of this program, obtain a copy of the INDUSTRIAL RELATIONS MAJOR PROGRAM, FACULTY OF ARTS, 1982-83, from either the Economics Department Office, Room 434, Leacock Building, or the Sociology Department Office, Room 709, Leacock Building. This description should be available by early July.

There will be an orientation meeting for students interested in this program on September 1 at 10:00 a.m. in Room 219, Leacock Building. Program requirements will be discussed in great detail. New students should plan to attend.

Consult departmental listings for more complete course descriptions. Not all courses are available in any given year..

Students choose a concentration in either economics or sociology. In either option there are 45 credits of specifically required courses and 9 additional credits from the list of Optional Courses.

Required Courses

ECONOMICS OPTION

Economics: 154-200D, 306D, 317D, 426D
Management: 279-294A/B, 491D, 492A, 494B
Sociology: 166-235A, 312B

SOCIOLOGY OPTION

Economics: 154-200D
Management: 279-294A/B, 491D, 492A, 494B
Sociology: 166-223A, 235A, 312B, 320B, 337A, 350A, 361B (or 321A, 316B), 420A.

Optional Courses

Economics: 154-205D, 211D, 304D, 306D, 321D, 426D
French Canada Studies: 157-370A
History: 101-202A, 203B, 221B or 331B, 303A, 333A, 363D, 403D, 442B
Management: 279-393A, 394B, 495B; 271-213A/B, 272-425A/B, 280-211A/B, 280-341A/B
Political Science: 160-320A, 321B, 325D, 337B
Sociology: 221B, 222B, 223A, 230A, 234A, 235A, 312B, 316B, 320B, 321A, 323B, 326A, 337A, 350A, 361B, 410A, 419B, 420A, 463B, 465B, 510B, 520A.

COMMENTS

Students in the Sociology option are encouraged to take Economics 154-306D and students in the Economics option, Sociology 166-320B and 420A.

The Economics 154-200D requirement can be satisfied by taking Economics 154-203A and 154-204B. This requirement can also be satisfied by an equivalent *University* level Economics course. If there is uncertainty about equivalency, consult one of the industrial relatons majors advisers in the Economics Department.

Sociology 210A or 212A (or CEGEP equivalent) is a prerequisite for all Sociology courses. If a student has not taken Introductory Sociology, it can be taken as an Arts option, but it cannot be used to satisfy part of the majors requirements.

For management courses students must obtain a "sectioning slip" in Room 453, Samuel Bronfman Building, before classes start.

Course Descriptions (MANAGEMENT)

Notes: Consult the calendar, FACULTY OF MANAGEMENT, Bachelor of Comnerce for more complete descriptions. Not all courses are available in any given year.

There are limitations on the number and type of management courses that students in the Industrial Relations Major Program can take. Consult *Industrial Relations Major Programs, Faculty of Arts, 1981-82* for details. This description is available in the Economics and Sociology departmental offices.

279-294A,B INTRODUCTION TO LABOUR-MANAGEMENT RELATIONS. (3 credits). An introduction to the problems of labour-management relations, the structure, function and government of labour unions, labour legislation, the collective bargaining process, and the public interest in industrial relations.

279-393A LABOUR RELATIONS IN QUÉBEC. (3 credits). *(Prerequisite: 279-294).* Students study the evolution of Québec's industrial relations policy and practice against this province's unique socio-cultural, economic and political background. In addition to providing a historical perspective, the course emphasizes contemporary events and problems which form the primary subject matter of student research projects.

279-394B COLLECTIVE BARGAINING. (3 credits; Prerequisite: 279-294A, students who have not taken Introduction to Industrial Relations will not be admitted). This course is designed for those students who wish to study the principles of collective bargaining in Canada and abroad. It deals with the structure of the bargaining in Canada and abroad. It deals with the structure of the bargaining parties and the structure of bargaining itself. It is problem oriented and relies heavily on empirical data and case problems.

279-491D INDUSTRIAL RELATIONS IN PRACTICE. (6 credits). The object of this course is to give the students an opportunity to apply the knowledge that they have gained in their Industrial Relations Program. Students will be encouraged to come to grips with a wide range of problems in industrial relations theory, policy and practice. This is achieved by means of guided reading and small discussion groups, mock collective bargaining sessions, contact with practioners in the field and problem-oriented research assignments. (Compulsory for Final Year Industrial Relations Majors. Others by permission of the instructor).

279-492A PUBLIC POLICY IN INDUSTRIAL RELATIONS. (3 credits). Collective bargaining and public policy towards Industrial Relations. Emphasis is placed on recent public investigations into labour relations in the federal and provincial jurisdictions. International comparisons are included.

279-494B INTRODUCTION TO LABOUR LAW. (3 credits). A general introduction to the basic concepts of labour law which are relevant to the practice of Industrial Relations. The course will review the historical development of labour law in certain social and legal systems and examine more fully the combination of this development in the legislative enactment and jurisprudence of the Canadian jurisdictions and certain comparative foreign models. (Open to Industrial Relations students only).

279-495B LABOUR RELATIONS IN THE PUBLIC SECTOR. (3 credits). This course covers labour relations in a broad area of public services, federal, provincial, and municipal, as well as in the socalled quasi-public services such as hospitals, schools and governmentagencies and boards. Students will be encouraged to come to grips with some of the more contentious current issues in public service labour relations and compare and analyse the alternative methods that have so far been evolved to deal withthem. Open to MBA II students who have completed 272-627A (Collective Bargaining) and to final year undergraduate students majoring in Industrial Relations. Others by permission of the instructor. (Not open to students who have taken 279-688B).

279-500A LABOUR AND INDUSTRIAL RELATIONS THEORY. (3 credits). History of thought and conflicting theories regarding the labour movement from 1700. Institutional change and the evolving concept of industrial relationships. The concept of industrial democracy and the shifting locus of power of industry, unions and governments. The current dilemma.

271-213A/B ACCOUNTING II.

272-425A/B SALARY ADMINISTRATIN.

280-211A/B ACCOUNTING I.

280-341A/B FINANCE I.

ISLAMIC STUDIES (397)

Professors – AHMAD ABU-HAKIMA; CHARLES J. ADAMS; ISSA J. BOULLATA; HERMANN LANDOLT *(on leave);* DONALD P. LITTLE
Assistant Professors – M. HASHIM KAMALI; A. UNER TURGAY
Visiting Professors – MEHDI MOHAGHEGH; BERNARD WEISS

Stephen Leacock Building
Room 817
855 Sherbrooke St. West
Montreal, PQ
Canada H3A 2T7
Telephone: (514) 392-5198

Course Descriptions

- *Denotes a courses not offered in 1982-83.*
- **397-504D THE ISLAMIC TRADITION.** (6 credits; 3 hours). The Islamic community and the elements of its tradition – scripture, prophet, doctrine, practices, institutions – considered historically and in terms of religious meaning. (Offered in alternate years). (Not open to students who have taken 260-450D or 397-604D).

• **397-510D HISTORY OF ISLAMIC CIVILIZATION: THE CLASSICAL PERIOD.** (6 credits; 3 hours). The origins of the early Islamic state in Arabia and the Umawi Caliphate. The growth of an Islamic civilization, and the Abbasi Empire until the Seljuk period. The rise of the Fatimis. The Caliphate of Cordoba. (Offered in alternate years). (Not open to students who have taken 397-610D).

397-511D HISTORY OF ISLAMIC CIVILIZATION: THE MEDIAEVAL PERIOD. (6 credits; 3 hours). The Seljuks, and the mediaeval synthesis. The Moors in Spain and North Africa. The Crusades. The Mongols and the destruction of the Baghdad Caliphate. The Mamluk, Persian, Turkish and Indian Empires until 1700. (Offered in alternate years). (Not open to students who have taken 397-611D).
Professor Little

397-521D INTRODUCTORY ARABIC. (6 credits; 5 lecture hours and laboratory). (Not open to students who have taken 397-100D or 397-621D).
Professor Boullata

397-522D LOWER INTERMEDIATE ARABIC. (6 credits; 4 lecture hours and laboratory; Prerequisite: 397-521D or equivalent). (Not open to students who have taken 397-200D or 397-622D).
Professor Weiss

ITALIAN (132)

Professors – ANTONIO D'ANDREA; PAMELA D. STEWART *(Chairman)*
Associate Professor – MICHELANGELO PICONE *(on leave, second term)*
Assistant Professors – SERGIO M. GILARDINO; ENRICA ROSSETTI
Faculty Lecturer – ANGELA SACCONAGHI
Sessional Faculty Lecturer –

Room 637, Samuel Bronfman Building, 1001 Sherbrooke St. West, Montreal, PQ, H3A 1G5. General Telephone Number: 392-4567.

MAJOR IN ITALIAN

30 credits to be chosen from the following: Italian 230D, 240D, 251A, 252B, 301A, 302B, 351A, 352B, 371A/B, 372A/B, 381A, 382B, 401A, 402A/B, 451A, 452B, 461A, 462B, 463A, 464B, 541A, 542B;

12 credits: 2 compulsory courses, Italian 360D and 470D; 381A and 382B together may be substituted for 360D;

12 other credits in Arts or Social Sciences subjects chosen in consultation with the Department.

Prerequisites: see under individual courses.

Adviser: Professor P.D. Stewart, Samuel Bronfman Building, Room 637-A, 392-4567.

HONOURS IN ITALIAN

Admission to the Honours program in Italian requires departmental approval. Students wishing to register in the program should consult with the Department as early as possible.

Students may begin Honours in Italian in the Second year, instead of the First year, if in the opinion of the Department they are found qualified to do so.

Courses required: 36 credits to be chosen from the following: Italian 230D, 240D, 251A, 252B, 301A, 302B, 351A, 352B, 371A/B, 372A/B, 381A, 382B, 401A, 402A/B, 451A, 452B, 461A, 462B, 463A, 464B, 541A, 542B;

12 credits: 2 compulsory courses, italian 360D and 470D; 381A and 382B together may be substituted for 360D;

6 credits: 1 compulsory tutorial, Italian 490D.

A minimum mark of 65% is required in each of the above listed courses.

Prerequisites: see under individual courses.

Adviser: Professor P.D. Stewart, Samuel Bronfman Building, Room 637-A, 392-4567.

JOINT HONOURS

Students may combine Honours in Italian with Honours in any one of the following subjects: Art History, English, French, German, Latin, Linguistics, Philosophy, Russian, Spanish. Admission to Joint Honours requires departmental approval. Students wishing to register in the program should consult with the Department as early as possible.

Students may register for Joint Honours in the Second year, instead of the First year, if in the opinion of the Departments they are found qualified to do so.

Italian courses required: 30 credits to be chosen from the following: 230D, 240D, 251A, 252B, 301A, 302B, 351A, 352B, 360D, 371A/B, 372A/B, 381A, 382B, 401A, 402A/B, 451A, 452B, 461A, 462B, 463A, 464B, 541A, 542B.

6 credits: 1 compulsory course, Italian 470D.

A minimum mark of 65% is required in each of the above listed courses.

Prerequisites: see under individual courses.

Adviser: Professor P.D. Stewart, Samuel Bronfman Building, Room 637-A, 392-4567.

Course Descriptions

• *Denotes not given 1982-83.*

Two sets of courses are offered by the Department:

a) Italian 132-200D, 205D, 210D, 215D, 230D, 240D, 251A, 252B, 301A, 302B, 351A, 352B, 360D, 371A/B, 372A/B, 381A, 382B, 401A, 402A/B, 451A, 452B, 461A, 462B, 463A, 464B, 470D, 490D, 541A, 542B: courses intended for students wishing to learn, or improve their knowledge of the language, and to study Italian literature in the original;

b) Italian 132-225D, 325B and 326A; courses on Italian literature given in English; Italian authors will be read in the original or in translation as preferred by students; knowledge of the Italian language is not required.

NOTE: For new courses in translation, please inquire at the Department of Italian.

132-200D ITALIAN LANGUAGE INTENSIVE. (12 credits; 6 hours and laboratory). For students who have had no opportunity to acquire any knowledge of Italian. Intensive language course, covering the first two levels in one year rather than the usual two.
Miss Sacconaghi

132-205D ITALIAN LANGUAGE FOR BEGINNERS. (6 credits; 3 hours and laboratory). Grammar, reading, dictation. Intensive practice in speech patterns and written structures. Conversation and composition. Visual material and selected readings will be used in describing the making of contemporary Italy. Opportunity for extra practice in Italian conversation is provided by the Department.
Staff

132-210D ITALIAN LANGUAGE AND CIVILIZATION. (9 credits; 5 hours; Prerequisites: Permission of the Department). Grammar, reading, conversation and composition. An outline of Italian civilization. This course is intended to enable students who have no formal grounding in the Italian language, to obtain in one year the same level of competence as students who have taken CEGEP Intermediate Italian.
Miss Sacconaghi

132-215D INTRODUCTION TO ITALIAN LITERATURE. GRAMMAR. CONVERSATION, AND FREE COMPOSITION. (6 credits; Prerequisite: Italian 205D or the equivalent). A survey of Italian literature with special emphasis on some aspects of the Italian Novel. Reading of selected works and group discussion.
Staff

- **132-225D MAIN TRENDS AND MAJOR WRITERS OF ITALIAN LITERATURE.** (6 credits; 1 lecture hour and 2 conference hours). Lectures are given in English. Readings in Italian or in translation, as preferred by students. This course is intended to give students, whether they know Italian or not, an insight into the main problems of the Italian literary tradition.
Professor D'Andrea and Staff

132-230D SURVEY OF ITALIAN LITERATURE. (6 credits; Prerequisite: CEGEP Intermediate Italian, or permission of the Department). Readings from representative works of Italian literature; special emphasis on the nineteenth and twentieth centuries.
Staff

132-240D MANZONI AND THE ITALIAN LITERATURE OF THE "RISORGIMENTO". (6 credits; Prerequisite: CEGEP Intermediate Italian, or permission of the Department). The Italian Romantic movement and its social and political background. The intellectual life of Alessandro Manzoni as reflected in his novel, *I Promessi Sposi.*
Professor Rossetti

132-251A THE "COMMEDIA DELL'ARTE". (3 credits; Prerequisite: CEGEP Intermediate Italian, or permission of the Department). Playhouses, actors, stage techniques, masks and scenarios of the "Commedia dell'arte."
Professor Stewart

132-252B ITALIAN DRAMA FROM GOLDONI TO PIRANDELLO. (3 credits; Prerequisite: Italian 251A, or permission of the Department). A study of drama in Italy from the eighteenth to the twentieth century, with emphasis on Goldoni and Pirandello.
Professor Stewart

132-301A LEOPARDI AND THE ITALIAN POETRY OF THE 19th CENTURY. (3 credits; Prerequisites: Italian 230D, 240D, 251A or 252B, or permission of the Department). Readings from Leopardi's *Canti* and from representative works of other nineteenth-century poets.
Professor Picone

132-302B CONTEMPORARY ITALIAN PROSE. (3 credits; Prerequisites: Italian 230D, 240D, 251A, or 252B, or permission of the Department). Italian novelists, playwrights, diarists, and essayists from 1945 to the present in the context of the Italian post-war society.
Professor Gilardino

132-325B DANTE AND THE MIDDLE AGES. (3 credits; Prerequisite: Permission of the Department). Lectures are given in English. Readings in Italian or in translation, as preferred by students. Students are not required to take language courses as prerequisites. Special emphasis will be placed on the history of ideas and on the cultural contacts of italy with England and France during the Middle Ages.
Professor Picone

132-326A THE RENAISSANCE: FROM PETRARCH TO MACHIAVELLI. (3 credits; Prerequisite: Permission of the Department). Lectures are given in English. Readings in Italian or in translation, as preferred by students. Students are not required to take language courses as prerequisites. Special emphasis will be placed on the history of ideas and on the cultural contacts of Italy with England and France during the Renaissance.
Professor D'Andrea

132-351A ARIOSTO'S ORLANDO FURIOSO. (3 credits; Prerequisites: Italian 230D, 240D, 251A or 252B, or permission of the Department). The

chivalresque genre and the courtly life of the Renaissance. Readings from Pulci's *Morgante,* Boiardo's *Orlando innamorato,* Castiglione's *Cortegiano,* and from the *Orlando Furioso.*
Professor Gilardino

- **132-352B TASSO'S GERUSALEMME LIBERATA.** (3 credits; Prerequisite: Italian 351A, or permission of the Department). A study of Tasso's poem in the context of the crisis of the Italian Renaissance.
Professor Gilardino

132-360D SEMINAR ON ITALIAN STYLISTICS AND COMPOSITION. (6 credits; 2 lecture hours per week and report on special assignment; Prerequisite: Permission of the Department). Intensive practice in stylistics and composition, with special emphasis on literary style. Seminar discussions on exercises and papers submitted by the students. Oral dissertations on various subjects, mainly of a literary character, prepared and delivered by students.
Miss Sacconaghi

- **132-371B THE BAROQUE AGE IN ITALY: POETRY AND PROSE.** (3 credits; Prerequisites: Italian 230D, 240D, 251A or 252B, or permission of the Department). A study of the most significant aspects of Italian scientific, historical and philosophical thought through the literature of the seventeenth century. Readings from Marino, Galilei, Muratori, Della Valle, etc.
Professor Gilardino

132-372B ALFIERI AND THE 18th CENTURY. (3 credits; Prerequisites: Italian 230D, 240D, 251A or 252B, or permission of the Department). Literary and intellectual renewal in 18th century Italy. Selected readings from Vico, Giannone, Muratori, Baretti, Verri, Beccaria, Parini, etc.; special emphasis will be placed on the autobiography and tragedies of Alfieri.
Professor Gilardino

132-401A VERGA AND THE "VERISMO". (3 credits; Prerequisites: Italian 230D, 240D, 251A or 252B, or permission of the Department). The realistic movement in Italian narrative prose (end of the 19th and beginning of the 20th century), with special emphasis on the novels and short stories of its main representative, Giovanni Verga.
Professor Rossetti

132-402A MODERN ITALIAN LITERATURE. (3 credits; Prerequisite: Italian 401A, or permission of the Department). A study of representative works of major Italian twentieth-century authors.
Professor Gilardino

132-451A BOCCACCIO AND THE ITALIAN NOVELLA. (3 credits, Prerequisites: Italian 230D, 240D, 251A or 252B, or permission of the Department). A study of Boccaccio's *Decameron* and of the Italian narrative prose up to the sixteenth century.
Professor Stewart

- **132-452B THE ITALIAN DRAMA OF THE RENAISSANCE.** (3 credits; Prerequisite: Italian 451A, or permission of the Department). The role of Humanism in the revival of Drama. Secular and religious festivals. The audience and the stage. Representative works of the major playwrights.
Professor Stewart

- **132-461A DANTE: THE DIVINE COMEDY.** (3 credits; Prerequisites: Italian 230D, 240D, 251A or 252B, or the equivalent, and permission of the Department). The structure and intellectual background on the *Divine Comedy:* a reading and interpretation of the poem; a discussion of the main trends in contemporary Dante scholarship.
Professor Picone

132-462B PETRARCH AND PETRARCHISM. (3 credits; Prerequisites: Italian 230D, 240D, 251A or 252B, or the equivalent, and permission of the Department). Petrarch's life, his temperament, his works; a reading and interpretation of his lyrical poetry; an account of his influence as a lyric poet in Italy and abroad.
Professor D'Andrea

132-463A DANTE: THE VITA NUOVA AND OTHER MINOR WORKS. (3 credits; Prerequisites: Italian 230D, 240D, 251A or 252B, or the equivalent, and permission of the Department). A study of the *Vita Nuova* in relation to the medieval literary tradition of courtly love. The *Monarchia,* the *Convivio,* and the *De vulgari eloquentia* will be studied in the context of Dante's wide ranging intellectual interests.
Professor Picone

- **132-464B MACHIAVELLI: THE PRINCE.** (3 credits; Prerequisites: Italian 230D, 240D, 251A or 252B, or the equivalent, and permission of the Department). An analysis of the text of *The Prince.* Selected readings from Machiavelli's other works.
Professor D'Andrea

132-470D SEMINAR ON ITALIAN LITERATURE. (6 credits; 2 lecture hours per week and report on special assignment; Prerequisite: permission of the Department).
Professor D'Andrea and Staff

132-490D TUTORIAL. (6 credits; Prerequisite: For U3 Honours students only).
Professor D'Andrea and Staff

132-541A STRUCTURE OF THE ITALIAN LANGUAGE. (3 credits; Prerequisite: Permission of the Department). A description of the main phonological, morphological and syntactic aspects of the Italian language.
Professor Picone

- **132-542B HISTORY OF THE ITALIAN LANGUAGE.** (3 credits; Prerequisite: Permission of the Department). An outline of the history of the language from its origins to modern times, with special emphasis on prose.
Professor Picone

JEWISH STUDIES PROGRAM (135)

Professors - HARRY M. BRACKEN; RUTH WISSE
Associate Professors - B. BARRY LEVY *(Chairman);* LAWRENCE KAPLAN *(on leave);* EUGENE ORENSTEIN
Assistant Professors - GERSHON HUNDERT: JEROME KUTNICK
Sessional Lecturers - NITZA KROHN: BRACHA MUSZKATEL; JANET WEINROTH; LOUIS TENCER

Room 102, 3511 Peel Street,
Montreal, PQ, H3A 1W7,
Telephone 392-5969.

The Jewish Studies Program, established in 1968, offers an interdisciplinary approach to the study of Judaica. It includes:

- a selection of courses which will enable students not majoring in Jewish Studies to broaden their knowledge of Jewish history and culture;
- elementary, intermediate and advanced courses in Jewish languages - Hebrew, Yiddish, and Aramaic. In the case of the first two, this includes attention to both spoken idiom and written texts;
- specialized courses in the various disciplines that comprise Jewish Studies for students who have specific academic interests;
- comprehensive undergraduate majors and honours programs culminating in advanced seminars and tutorials for students contemplating careers in the various fields of Judaica. The Honours program in Jewish Studies will give students the necessary linguistic, textual and bibliographical knowledge to enable them to pursue graduate work in Jewish Studies.

The Graduate Program is described in the *Faculty of Graduate Studies and Research Announcement.*

MAJOR IN JEWISH STUDIES

A major consists of 54 approved credits distributed as follows:

1) Completion of third year level of instruction in a Jewish language. (When a student is able to demonstrate competence in a Jewish language, that student may be permitted to substitute other courses for all or part of the language requirement.)

2) Nine credits will be composed as follows:
Jewish Studies 135-211A.
Any two of the following:
Jewish Studies 135-212B or History 101-207A.
Jewish Studies 135-213A or History 101-237A,B.
Jewish Studies 135-214B or History 101-247B.

History and Jewish Studies courses covering the same period will be offered in alternate years.

3) The remaining 27 credits will be planned in consultation with the adviser.

HONOURS IN JEWISH STUDIES

An honours program consists of 66 approved credits distributed as follows:

1) Each honours student will complete at least one Jewish language at the third year level of instruction. (When a student is able to demonstrate competence in a Jewish language, that student may be permitted to substitute other courses for all or part of the language requirement).

2) Nine credits will be composed as follows:
Jewish Studies 135-211A.
Any two of the following:
Jewish Studies 135-212B or History 101-207A.
Jewish Studies 135-213A or History 101-237A,B.
Jewish Studies 135-214B or History 101-247B.

3) The remaining 39 credits will be planned in consultation with the adviser and will reflect the student's progress through successive stages from elementary to intermediate to advanced.

4) Each Honours student will prepare a senior thesis under the direction of a staff member usually in conjunction with a seminar or tutorial.

5) Honours students are expected to achieve a grade of "B" or higher in every Jewish Studies course.

Major/Honours Adviser:
Professor Gershon Hundert 392-4304.

Note: Major and Honours Students are encouraged to acquire a general background in Jewish Studies, fluency in at least one Jewish language, and expertise in one aspect of the field. While many areas of specialization exist, the groupings which follow the course descriptions represent our departmental strengths and are usually chosen by students.

INTERDEPARTMENTAL PROGRAMMING

Many of the courses in Jewish Studies are related to other departments e.g. History, Religion, Comparative Literature. There are also

related courses in other departments which students specializing in certain areas of Jewish Studies might be encouraged to include in their programs. e.g. Classical Greek, Arabic, Theories of Literature, etc.

JOINT HONOURS

Students wishing to arrange joint honours programs may do so in consultation with the appropriate departments such as Sociology, etc.

Students must satisfy the requirements of both departments. Usually the program will require at least 33 credits and will include the regular requirements listed under Honours in Jewish Studies 1), 2) and 4). The remaining courses will be planned in consultation with the Jewish Studies adviser, depending on the student's academic background and particular area of interest.

Jewish Teacher Training Program

Established in 1973 in the Faculty of Education in conjunction with the Jewish Studies Program, the Jewish Teacher Training Program prepares students to teach at the elementary and secondary school levels. Students pursue a course of studies in educational theory and methodology as well as in Jewish Studies.

The Teacher Training Program offers three degree and diploma streams:

1. A four year B.A. and teachers diploma, consisting of a three year Jewish Studies major in the Faculty of Arts plus one year diploma program in the Faculty of Education.
2. A three year B.Ed. with a specialization in Jewish Studies.
3. A one year Diploma in Education for graduates with a Jewish Studies major or its equivalent.

All students are encouraged to spend their second year of studies in Israel on the Jewish Teacher Training Program's special program at The Hebrew University.

Further information can be obtained by contacting Mr. Jerome Kutnick at 392-8257.

Course Descriptions

• *Denotes a course not offered in 1982-83. (Most courses not offered in 1982-83 will be offered in 1983-84).*

Advanced courses have language and subject prerequisites. U1 students and students not majoring in Jewish Studies should consult the professor before registering for any course above 399.

101-207B A HISTORY OF THE JEWS FROM THE HELLENISTIC PERIOD TO THE END OF THE TALMUDIC AGE. (3 credits). This course will provide an overview of Jewish history from the period of Ezra and Nehemiah to the death of Hai Gaon, c. 1035, focussing on the experience of the Jews in Hellenistic and Islamic civilizations. Topics discussed will include Jewish sects, rabbinic literature in its various genres, the Karaite schism, and the rise of the Gaonate. (Not open to students who have taken 101-207D).
Professor Hundert

101-237A HISTORY OF THE JEWS FROM THE RISE OF WEST EUROPEAN JEWRY TO 1666. (3 credits). This course will focus on the experience of the Jews in Western Christendom, including the Iberian peninsula. Topics discussed will include legal, ethical and philosophical trends and schools, the development of communal institutions, the Jews and the Church, and demographic and occupational patterns and changes. (Not open to students who have taken 101-207D).
Professor Hundert

• **101-247B HISTORY OF THE JEWS FROM 1666 TO THE PRESENT.** (3 credits). This course will provide an overview of modern Jewish history. Emphasis will be placed on the continuing and varied responses to the political, economic, demographic and ideological changes during the past three centuries. (Not open to students who have previously taken History 101-207D).
Professor Hundert

101-307D THE HISTORY OF THE JEWS INPOLAND c. 1110-1945. (6 credits; Prerequisite: History 207D or permission of instructor). The course will include analysis of primary sources (in translation) related especially to the social, economic and institutional history of the Jews in Poland and their place in the East European Jewish community. Topics to be discussed: the Jews during "The Flood" (1648-1667), the communal crisis of the late 17th century, the Frankist movement, and Hasidism.
Professor Hundert

• **101-327B JEWS IN THE ORBIT OF ISLAM.** (3 credits; Prerequisite: History 207D or consent of the instructor; Recommended History 209D). This course will give an overview of the history of the Jews in the Islamic world from 622 to the present. Emphasis will be placed on the classical period (to 1250), and on institutional and cultural themes. Some comparative perspectives will be offered on the experience of Jews and other minorities, under Islam.
Professor Hundert

• **101-427A THE HASIDIC MOVEMENT.** (3 credits; Prerequisite: History 307D or consent of the instructor). A historical examination of the Hasidic Movement from its beginnings in eighteenth-century Poland to the present. Although em-

phasis will be placed on the social history of the movement, doctrinal developments will be examined as well.
Professor Hundert

101-477D SEMINAR: JEWISH HISTORY. (6 credits). Topic for 1982-83: The Jewish Community in Europe to 1789.
Professor Hundert

135-200D HEBREW LANGUAGE INTENSIVE. (12 credits). Intensive language course, covering the first two levels in one year rather than the usual two. (Not open to students who have taken or are taking 135-220D or 320D).
Staff

135-205A SURVEYOF HEBREW LITERATURE FROM THE BIBLE TO THE PRESENT. (In translation). (3 credits). Survey of the development of Hebrew literature – drama, poetry and prose – reflecting the political, cultural and social problems of Hebrew letters. (Not open to students who have taken 135-312A or 135-313B).
Staff

135-206B INTRODUCTION TO YIDDISH LITERATURE. (3 credits). An introduction to the development of Yiddish literature since the 15th century, with emphasis on the rise of modern Yiddish belles-lettres from the middle of the 19th century. Readings in English translation. (Not open to students who have taken 135-360A or 135-361B).
Professor Wisse

135-211A JEWISH STUDIES I: THE BIBLICAL PERIOD. (3 credits). The history, literature and beliefs of Judaism's formative period. Both Biblical and non-Biblical materials will be studied. The Bible will be approached in the context of cognate literatures of the Ancient Near East; non-Biblical documents will be analysed for their bearing on the Jewish tradition. All texts will be read in English.
Professor B. Levy

- **135-212B JEWISH STUDIES II: THE TALMUDIC PERIOD.** (3 credits). The history, literature and intellectual developments in Judaism during late antiquity. Special emphasis will be placed on rabbinic literature e.g. Babylonian Talmud, Palestinian Talmud, the midrashim both as literary works and for the light they shed on the events and ideologies of the period. All texts and discussions will be in English.
Professor Kaplan

- **135-213A JEWISH STUDIES III: THE MEDIEVAL PERIOD.** (3 credits). The history, literature and intellectual developments in Judaism during the medieval period. Special emphasis will be placed upon the interaction between religious ideologies and historical events as illustrated for example by (a) the Karaite-Rabbanite conflict at the beginning of the medieval era; (b) the controversies surrounding the writings of Maimonides at the height of the medieval era; (c) the Sabbatian debacle at the close of the medieval era. All texts will be read in English.
Professor Kaplan

135-214B JEWISH STUDIES IV: THE MODERN PERIOD. (3 credits). The intellectual and social developments resulting from Jewry's confrontation with modernity. Special emphasis will be placed on Hasidism, Haskalah and on the national and social movements sparked by the Englightenment's failure to answer the Jewish question. All texts will be read in English.
Professor Orenstein

135-220D INTRODUCTORY HEBREW. (6 credits).
Staff

135-252A INTERDISCIPLINARY LECTURES IN JEWISH STUDIES. (3 credits). Topic for 1982-83; The Holocaust, the Destruction or European Jewry. Lectures will be given by members of the Jewish Studies Program in their several disciplines. Questions will be raised concerning the historical and ideological nature of intolerance, racism, genocide and nationalistic and theoretical anti-semitism. Poems and novels concerning the Holocaust will be discussed. Students are free to concentrate in the areas of their choice. In English. (Not open to students who have taken 135-352A).
Staff

135-280D INTRODUCTORY YIDDISH. (6 credits). Concentrated introduction to spoken and written Yiddish. Selected readings in Yiddish literature.
Mr. Tencer

- **135-305A AMERICAN JEWISH HISTORY FROM THE COLONIAL PERIOD TO 1914.** (3 credits). The interaction of Jewish and American historical traditions in forging the American Jewish experience. The themes of acculturation, immigration and political behavior will be treated.
Professor Kutnick

135-306A AMERICAN JEWISH COMMUNITY. (3 credits). Issues affecting American Jewry in the post-World War I era and the American Jewish community response to those issues. Special emphasis will be placed upon understanding the community responses and reactions to developments in both the American society and in the Jewish world.
Professor Kutnick

- **135-310B BELIEVERS, HERETICS AND CRITICS.** (3 credits). Issues in the development of Biblical interpretation based on classical Jewish thought, heretical Jewish doctrines and contemporary Biblical criticism.
Professor B. Levy

- **135-316A,B SOCIAL AND ETHICAL ISSUES IN JEWISH LAW.** (3 credits). This course will begin with a brief introduction to the nature and history of Jewish law. Specific topics to be discussed

are: abortion, collaboration with tyranny, ransom, hostages and blackmail.
Professor L. Kaplan

- **135-319B JUDAISM AND THE OCCULT.** (3 credits). Popular and deviant elements which have at various times been integrated into Judaism will be studied. The interaction of magic and religion will be analysed through the study of Jewish texts from both the authoritative religious literature as well as from sources on the periphery of classical Judaism. Readings and discussions in English.
Professor B. Levy

135-320D INTERMEDIATE HEBREW. (6 credits).
Staff

135-324B BIBLICAL INTERPRETATION IN ANTIQUITY. (3 credits). Texts from the millenium before the rise of Islam will be studied for the light they shed on Jewish interpretation of Hebrew scripture. Selections will deal with both narrative and legal portions of the Bible and will include pagan, Christian and Jewish sources, though primarily the last. Among the writers and texts to be excerpted will be the Bible and Philo, Josephus, Pseudo-Philo, Jubilees, Enoch, Eusebius, Dead Sea Scrolls (including The Temple Scroll), Ephraem Syrus, Origen, Jerome, The Septuagint, Targumim, Talmud and Midrash.
Professor B. Levy

135-325/326/327/328/329/330 A BOOK OF THE BIBLE. (3 credits each; Prerequisite: A reading knowledge of Hebrew). One book of the Bible will be studied in its entirety in Hebrew. The major emphasis will be on the contributions of Ancient Near Eastern Studies (archaeology, comparative literature and Semitic linguistics) to understanding the text. To be offered in 1982-83: 135-330B: Exodus.
Professor B. Levy

- **135-333B THE HEBREW LITURGY.** (3 credits; Prerequisite: Reading knowledge of Hebrew). The structure, contents, foci and ideological assumptions of Jewish prayer. Texts studied will reflect the different approaches to prayer in Biblical, rabbinic, medieval and modern periods, but the major area of concern will be the evolution of the classical Hebrew prayer book (Siddur) and the Passover Haggadah.
Professor B. Levy

135-340D ADVANCED HEBREW. (6 credits; Prerequisite: Hebrew 320D or its equivalent).
Staff

- **135-345A INTRODUCTION TO RABBINIC LITERATURE.** (3 credits). An introduction to the study of rabbinic texts (Tannaitic and Amoraic) in the original. Both conceptual analysis and critical methods will be stressed.
Professor Kaplan

135-346A/347B/348A/349B MODERN JEWISH STUDIES. (3 credits each; Prerequisite: Permission of instructor). Topics in Jewish Studies. Semesters will be devoted to specific issues and periods of The Jewish Experience since 1500 and the literature produced by Jews during this period.
Professors J. Kutnick, R. Wisse, E. Orenstein

135-351A STUDIES IN MODERN JEWISH FICTION. (3 credits). This course will examine the question of Jewish literature in non-Jewish languages. Readings in Kafka, Joseph Roth, Isaac Babel, Isaac Rosenfeld and Saul Bellow.
Professor Wisse

- **135-353B INTERDISCIPLINARY LECTURES IN JEWISH STUDIES.** (3 credits).

135-356D JEWISH LABOUR MOVEMENT. (6 credits). The development of the Jewish Labour Movement both in Eastern Europe and North America fromthe last quarter of the 19th century to the Bolshevik Revolution. Special emphasis is given to the problem of nationalism and cosmopolitanism within the Jewish Labour Movement and to the movement's influence on secular Jewish culture.
Professor Orenstein

- **135-358A TOPICS IN JEWISH PHILOSOPHY.** (3 credits). Jewish Political Philosophy. An introduction to some of the major issues in Jewish political philosophy; the political function of prophecy, the nature of the Divine law, community and nation, the ideal state, the ground of obligation. Readings from representative medieval and modern thinkers.
Professor Kaplan

- **135-359B TOPICS IN JEWISH PHILOSOPHY.** (3 credits). Medieval Jewish Philosophy. An introduction to some of the major issues in medieval Jewish Philosophy; reason and revelation; the nature of God; prophecy and law; providence, miracles and freedom, man's ultimate perfection. Selected readings from Saadia, Bahya, Maimonides, Albo, Judah Ha-Levi and Hasdai Crescas.
Professor Kaplan

135-362D THE SHTETL. (6 credits). Using the historical, sociological, literary and cultural sources, this course will examine various aspects of communal and individual life in the *shtetl,* the Jewish - or largely Jewish - town in Eastern Europe. Readings and discussion in English.
Professors Wisse and Orenstein

- **135-363A/364B THE SHTETL UPROOTED: 1881-1924.** (3 credits each). The cultural and social adaptation of East European Jews in America. This course will focus on the tensions of Jewish settlement that found expression in dynamic social movements and in vital literary and cultural experimentation. Readings and discussion in English.
Professors Wisse and Orenstein

135-366B ZIONISM: WORLD JEWRY AND THE IDEA OF THE JEWISH STATE. (3 credits). This course examines the changing attitudes of World Jewry towards the Zionist idea before the creation of the Jewish state. It will examine how against the background of external pressures in the non-Jewish world and internal pressures in the Jewish community of Zionism developed from romantic ideas and national aspirations of a small group of the Jewish people to an elaborated ideology and political program of organized Jewry.
Professor Kutnick

135-367A/368B/369A/370B STUDIES IN HEBREW LANGUAGE AND LITERATURE. (3 credits each).

135-380D INTERMEDIATE YIDDISH. (6credits; Prerequisite: 135-280D or permission of instructor). This course is designed to develop the student's language skills upon completion of the text *Coliege Yiddish* (Vol. I). Selected texts reflecting the development of American Yiddish literature will be studied.
Professor Orenstein

- **135-381A,B MODERN YIDDISH LITERATURE.** (3 credits; Prerequisite: Reading knowledge of Yiddish). This course will deal alternately with the development of various literary genres – the drama, the novel, the short story, the poem. (Not open to students who have taken 135-381D or 135-382D).
Professor Wisse

- **135-402B READINGS IN RABBINIC LITERATURE.** (3 credits: prerequisite: A reading knowledge of Hebrew and an introductory course in Rabbinic Judaism or permission of instructor). A close study of selected rabbinic texts. Different types of texts will be chosen for analysis: legal, narrative, biographical, historical, philosophical, etc. Stress will be placed upon the development of linguistic and interpretive skills. (Not open to students who have taken 135-336A).
Professor Kaplan

135-411A, 412B TOPICS IN MODERN HEBREW LITERATURE. (3 credits each). The development of various genres and themes in modern Hebrew drama, poetry and prose. (Knowledge of Hebrew preferable but not required). (Not open to students who have taken 135-411D).
Staff

- **135-438A, 439B TUTORIAL IN HEBREW LITERATURE.** (3 credits each; Prerequisite: Third year Hebrew or permission of instructor).
Staff

135-456A/457B/458A/459B STUDIES IN THE HEBREW BIBLE. (3 credits each; Prerequisite: Permission of instructor). Supervised independent research in Hebrew scripture and its interpretation.
Professor B. Levy

- **135-498D STUDIES IN YIDDISH LITERATURE.** (6 credits; Prerequisite: Third year Yiddish or permission of instructor).
Professor Wisse

135-499D STUDIES IN YIDDISH LITERATURE. (6 credits; prerequisite: Reading knowledge of Yiddish or permission of instructor). An advanced course in Yiddish literature. Topic for 1982-83: The Development of The Modern Yiddish Short Story.
Professor Wisse

135-506A ARAMAIC LANGUAGE. (3 credits; Prerequisite: Fluency in Hebrew). Introduction to classical Aramaic, Qumran Aramaic, Samaritan, Palestinian and Babylonian Talmudic. The approach will be comparative enabling the acquisition of reading skills in these dialects. Texts will be selected from Aramaic Bible translations and interpretations.
Professor B. Levy

135-507B THE HISTORY OF THE TEXT OF THE HEBREW BIBLE. (3 credits). The text of the Hebrew Bible as it evolved between antiquity and the most recent printed edition. Attention will be given to 1) the accurate reconstruction of the Bible from primary and secondary witnesses: Greek and Aramaic translations, Dead Sea Scrolls, ancient quotations, etc.; 2) the Massoretic notes and lists which have been appended: vocalization and accentuation systems, Qeri and Kethib, "emendations of the scribes," etc. Ancient Hebrew inscriptions and Bible manuscripts will provide the texts studied.
Professor B. Levy

135-512A THE HISTORY OF JEWISH INTERPRETATION OF THE BIBLE. (3 credits). The literature and hermeneutics of Jewish Biblical interpretation historically considered: Hellenistic literature; Dead Sea Scrolls; Midrashim, Targumim, Talmudim; Medieval Commentators, Linguists and Philosophers; the Haskalah, etc.
Professor B. Levy

135-542A/543B 544A/545B/546/547B/548A/549B SELECTED TOPICS IN BIBLICAL INTERPRETATION. (3 credits). Given in 1982-83: 135-542B Readings in Aramaic Bible Translations. Prerequisite: Reading knowledge of Aramaic (students lacking this knowledge should register for 135-506A in September). Selections from Aramaic Bible Translations in printed and manuscript form: Onkelos, Pseudo-Jonathan, The Palestinian Targum, Peshitta, and Targum of the Hagiographa.
Professor B. Levy

- **135-553B THE HISTORY OF MODERN JEWISH SECULARISM.** (3 credits). The rise and development of Jewish secularism; i.e. the various ideologies which attempt to define the Jews in socio-cultural, national and historical terms, will be analyzed within the context of modern Euro-

pean nationalism. Selected texts of the Jewish Enlightenment, Peretz Smolenskin, Leon Pinsker, Simon Dubnow, Chaim Zhitlowsky and Ahad Ha-Am, will be studied.
Professor Orenstein

- **135-554A MODERN JEWISH BIBLICAL SCHOLARSHIP.** (3 credits). An analysis of the attempt on the part of Jewish scholars in the modern era to create a biblical scholarship that would meet the objective universal standards of critical historical scholarship and at the same time be distinctively Jewish. Among figures to be discussed are Mendelssohn, Luzzato, Krochmal, Hoffmann, Buber, Rosenzweig, Kaufman, Cassuto and such contemporary figures as R. Gordis and M. Greenberg.
Professor Kaplan

135-556A/557B/558A/559B PROBLEMS IN MEDIEVAL BIBLICAL INTERPRETATION. (3 credits each).

- **135-560A/361B TOPICS IN MODERN JEWISH THOUGHT.** (3 cedits each; Permission of instructor). This course will analyze the place of Judaism and the Jewish people in modern culture and civilization as reflected in the writings of such Jewish thinkers as Mendelssoh, Cohen, Rosenzweig, Kook, Soloveitchik and Leibowitz.
Professor Kaplan

135-585A TUTORIAL IN EAST EUROPEAN STUDIES I. (3 credits).
Professor Orenstein

135-586B TUTORIAL IN EAST EUROPEAN STUDIES II. (3 credits).
Professor Orenstein

135-587A/588B SEMINAR IN YIDDISH LITERATURE. (3 credits). Given in 1982-83: 135-588B The Novel. Students may focus on the development of the modern Jewish novel in Yiddish, Hebrew or English.
Professor Wisse

TOPICAL LISTINGS

To check if offered in a particular year, consult the course descriptions above.

I Civilization Courses

Introductory courses with no language or Judaica prerequisite.

101-207D A HISTORY OF THE JEWS FROM THE HELLENISTIC PERIOD TO THE END OF THE TALMUDIC AGE.

135-211A JEWISH STUDIES I: THE BIBLICAL PERIOD.

135-212B JEWISH STUDIES II: THE TALMUDIC PERIOD.

135-213A JEWISH STUDIES III: THE MEDIEVAL PERIOD.

135-214B JEWISH STUDIES IV: THE MODERN PERIOD.

101-237A HISTORY OF THE JEWS FROM THE RISE OF WESTERN EUROPEAN JEWRY TO 1667.

101-247B HISTORY OF THE JEWS FROM 1666 TO THE PRESENT.

101-327B JEWS IN THE ORBIT OF ISLAM.

II Biblical Studies

Including Bible text; The Bible and The Ancient Near East; and The History of Jewish Interpretation.

Students lacking the necessary language training for work in the primary sources should take the appropriate Hebrew language course listed below under Modern Jewish Languages and Literatures.

135-211A JEWISH STUDIES I: THE BIBLICAL PERIOD.

135-324A BIBLICAL INTERPRETATION IN ANTIQUITY.

135-330B A BOOK OF THE BIBLE.

135-456A/457B/458A/459B STUDIES IN THE HEBREW BIBLE.

135-506A ARAMAIC LANGUAGE.

135-507B THE HISTORY OF THE TEXT OF THE HEBREW BIBLE.

135-512A THE HISTORY OF JEWISH INTERPRETATION OF THE BIBLE.

135-542A/543B/544A/545B/546A 547B/548A/549B SELECTED TOPICS IN BIBLICAL INTERPRETATION.

135-544A MODERN JEWISH BIBLICAL SCHOLARSHIP.

135-556A/557B/558A/559B PROBLEMS IN MEDIEVAL BIBLICAL INTERPRETATION.

III Rabbinic Studies

Including Talmudic, Halachic and Philosophical Materials. Students lacking the necessary language training to work in the primary sources should take the appropriate Hebrew language course listed below under Modern Jewish Languages and Literatures.

135-212B JEWISH STUDIES II: THE TALMUDIC PERIOD.

135-213A JEWISH STUDIES III: THE MEDIEVAL PERIOD.

135-316A,B SOCIAL AND ETHICAL ISSUES IN JEWISH LAW.

135-319B JUDAISM AND THE OCCULT.

135-333B THE HEBREW LITURGY.

135-345A INTRODUCTION TO RABBINIC LITERATURE.

135-358A TOPICS IN JEWISH PHILOSOPHY.

135-359B TOPICS IN JEWISH PHILOSOPHY.

135-402B READINGS IN RABBINIC LITERATURE.

IV Modern Jewish Languages and Literatures

1) HEBREW:

135-200D HEBREW LANGUAGE INTENSIVE. (12 credits).

135-205A SURVEY OF HEBREW LITERATURE FROM THE BIBLE TO THE PRESENT.

135-206B INTRODUCTION TO YIDDISH LITERATURE.

135-220D INTRODUCTORY HEBREW.

135-320D INTERMEDIATE HEBREW.

135-340D ADVANCED HEBREW.

135-367A/368B/369A/370B STUDIES IN HEBREW LANGUAGE AND LITERATURE.

135-411A/412B TOPICS IN MODERN HEBREW LITERATURE.

135-438A/439B TUTORIAL IN HEBREW LITERATURE.

2) YIDDISH

135-280D INTRODUCTORY YIDDISH.

135-380D INTERMEDIATE YIDDISH.

135-381A,B YIDDISH LITERATURE.

135-498D STUDIES IN YIDDISH LITERATURE.

135-499D STUDIES IN YIDDISH LITERATURE.

135-587A SEMINAR IN JEWISH LITERATURE.

135-588B SEMINAR IN JEWISH LITERATURE.

V Modern Jewish Studies

135-214B JEWISH STUDIES IV: THE MODERN PERIOD.

135-252A INTERDISCIPLINARY LECTURES IN JEWISH STUDIES: THE HOLOCAUST.

135-305A AMERICAN JEWISH HISTORY FROM THE COLONIAL PERIOD TO 1945.

135-306A THE AMERICAN JEWISH COMMUNITY.

101-307D THE HISTORY OF THE JEWS IN POLAND c. 1110-1945.

135-346A/347B/348A/349B MODERN JEWISH STUDIES.

135-351A STUDIES IN MODERN JEWISH FICTION.

135-356D JEWISH LABOUR MOVEMENT.

135-358A TOPICS IN JEWISH PHILOSOPHY.

135-362D THE SHTETL.

135-363A/364B THE SHTETL UPROOTED: 1881-1924.

135-366B ZIONISM: WORLD JEWRY AND THE IDEA OF THE JEWISH STATE.

101-427A THE HASIDIC MOVEMENT.

101-477D SEMINAR: THE JEWISH COMMUNITY IN EUROPE TO 1789.

135-553B THE HISTORY OF MODERN JEWISH SECULARISM.

135-560A/561B TOPICS IN MODERN JEWISH THOUGHT.

135-585A TUTORIAL IN EAST EUROPEAN STUDIES I.

135-586B TUTORIAL IN EAST EUROPEAN STUDIES II.

RELATED COURSES IN OTHER DEPARTMENTS

260-201A RELIGIOUS TRADITIONS OF THE ANCIENT NEAR EAST I.
Professor Runnalls

260-202B RELIGIOUS TRADITIONS OF THE ANCIENT NEAR EAST II. (Prerequisite: 260-201A or its equivalent).
Professor Runnalls

260-300A THE POST-BIBLICAL JEWISH TRADITION.
Professor Runnalls

260-301B JEWISH SECTARIAN THOUGHT (200 B.C.E. – 200 C.E.). (Prerequisite: 260-300A or permission of instructor).
Professor Runnalls

260-390D ELEMENTARY BIBLICAL HEBREW.
Professor Runnalls

260-490D ADVANCED BIBLICAL HEBREW.
Professor Culley

160-347A THE POLITICS AND FOREIGN POLICY OF ISRAEL.
Professor M. Brecher

166-327A SOCIOLOGY OF THE JEWS IN NORTH AMERICA.
Professor Weinfeld

LATIN AMERICAN STUDIES

Adviser: Professor Lipp,
Department of Hispanic Studies, Bronfman Building,
Telephone: 392-4601

Minimum of 12 credits in Spanish; or Portuguese; 42 credits from the Departments of Anthropology, Economics, Geography, Hispanic Studies, History, Political Science and Sociology. Students will normally be required to complete the Latin American Studies Research Seminar (138-499B) in the last semester of their program.

Courses

Consult departmental listings for complete course descriptions. Note that not all courses listed are available in any given year.

ANTHROPOLOGY

151-221A Introduction to Urban Anthropology. (3 credits).
151-325A Peoples of the Caribbean. (3 credits).
151-326A Native Peoples of South America. (3 credits).

ECONOMICS

154-312D Political Economy of Dependence in the Western Hemisphere. (3 credits).
154-410-412 Economic Development of a Selected World Area. (3 credits each).
154-413-416 Selected Topics in Economic Development. (3 credits each).

ENGLISH

110-321A Caribbean Fiction. (3 credits).

GEOGRAPHY

183-310B Geography of the Caribbean. (3 credits).
183-317A Geography of Latin America: Agrarian Issues. (3 credits).
183-408A Geography of Underdevelopment: Historical Roots. (3 credits).
183-410B Geography of Underdevelopment: Current Problems. (3 credits).

HISPANIC STUDIES

144-231A Spanish American Civilization (3 credits).
144-232B Spanish American Civilization (3 credits).
144-243A Survey of Spanish American Literature. (3 credits).
144-244B Survey of Spanish American Literature. (3 credits)
144-328B Literature of Ideas: Spanish America. (3 credits).
144-332A Spanish American Literature of the 19th Century. (3 credits).
144-333A Spanish American Theatre. (3 credits).
144-351D Spanish American Novel of the 20th Century. (6 credits).
144-356B Spanish American Short Story. (3 credits).
144-432B Spanish American Colonial Literature. (3 credits).
144-442B Modernismo (3 credits).
144-453A Spanish American Poetry Since Modernismo. (3 credits).
144-454B,455B The "New" Spanish American Novel. (3 credits).

HISTORY

101-310D Topics in Latin American History. (3 credits)

LATIN AMERICAN STUDIES

138-498B READING AND RESEARCH. (3 credits; Prerequisite: 138-499A). An individual tutorial which will provide the opportunity for students to pursue a research project in their principal area of study.

138-499A RESEARCH SEMINAR ON LATIN AMERICA. (3 credits; Prerequisite: open to Area Majors students and to others by permission). An interdisciplinary research seminar on topics of common interest to staff and students of the Latin American Studies Program.

POLITICAL SCIENCE

160-227B Political Change in the Third World: Independence and Nation Building. (3 credits).
160-300D Comparative Revolution. (6 credits).
160-319D Politics of Latin America. (6 credits).
160-343B Contemporary International Systems; Latin America. (3 credits).
160-471A Liberalization of Authoritarian Regimes. (3 credits).

SOCIOLOGY

166-405B Social Change in the Caribbean. (3 credits).

LINGUISTICS (104)

Professors - C.D. ELLIS; *(Chairman);* A. RIGAULT
Associate Professors - I. BELLERT; M. GOPNIK; M. PARADIS: G.L. PIGGOTT
Assistant Professors - N. DOMINGUE: R. FREIDIN

Room 584, Samuel Bronfman Building, 1001 Sherbrooke St. West, Montreal, PQ, H3A 1G5. Telephone: 392-4433.

GENERAL INFORMATION

The field of Linguistics deals with the study of language as a phenomenon of human behaviour and the following course list indicates the several areas covered. The Department of Linguistics does not normally undertake the teaching of any specific language, especially where provision for such instruction is made elsewhere in the Univer-

sity. Many linguistics courses, however, serve as a useful basis for or adjunct to language, serve as a useful basis for or adjunct to language learning. In addition, courses in linguistics provide a useful background to those planning a career in language teaching, translation, child psychology, speech therapy, aphasiology, communication, advertising, and teaching and research in Anthropology, Sociology and Psychology.

In its undergraduate section the Department of Linguistics offers Major, Honours and Joint Honours programs to students wishing various degrees of concentration in Linguistics.

MAJOR PROGRAM

The Major program in Linguistics includes:

1) 36 credits in Linguistics. The following courses are required: 250A, 351B, 355A, 360A, 455B, plus at least three 400-level and/or designated 500-level courses selected in consultation with the Department and four further linguistics courses approved by the Department.
2) 18 credits taken in one or two of the following disciplines: Anthropology, Language (classical of modern), Philosophy, Psychology, Mathematics, Sociology. Six of the eighteen credits may be taken in Linguistics.

Inquiries maybe addressed to the departmental office or the advisers for undergraduate studies.

HONOURS PROGRAM

The Honours program in Linguistics comprises:

1) 42 credits in Linguistics, to include 250A, 351B, 355A, 360A, 540A, 455B, 482D, three other 400-level or designated 500-level courses, plus three further linguistics courses approved by the Department.
2) Four full language courses in two languages: a major language (18 credits) and a minor language (6 credits). Students who have taken appropriate language courses at C.E.G.E.P. *may* be permitted to substitute linguistics courses for language credits. Students may choose either a classical or modern language, or two modern languages other than English or French, one of which should preferably be non-Indo-European.
3) 24 additional credits (which may include other linguistics courses).

An average B grade (minimum 65% – G.P.A. of 2.8) is required to maintain Honours standing in Linguistics and a minimum mark of 65% is normally required in each of the obligatory Linguistics courses. The normal requirement for First Class Honours is a G.P.A. of 3.6 and a high level of achievement in the research thesis (482). Inquiries may be addressed to the departmental office or to the advisers for undergraduate studies.

JOINT HONOURS PROGRAMS

Joint Honours programs, combining Linguistics with any one of the following subjects, are available: Anthropology, Classics, English, French, German, Ancient Greek, Italian, Latin, Philosophy, Russian, and Spanish. The Linguistics part of the requirement for these programs is the completion of 36 credits in Linguistics, which must include 250A, 351B, 355A, 360A, 455B, three other 400-level or designated 500-level courses, plus four further linguistics courses approved by the Department.

For further information on the Linguistics requirements of specific Joint Honours programs, consult the departmental office. For information on the requirements of the other discipline making up the program, consult the department concerned.

Course Descriptions

Courses marked with an asterisk (*) have no prerequisite.

• *Denotes a course not offered in 1982-83.*

INTRODUCTORYLINGUISTICS

104-200A,B INTRODUCTION TO THE STUDY OF LANGUAGE I.* (3 credits). This is the first part of a sequence of courses designed as an introduction to the study of language for students who do not intend to specialize in linguistics. This sequence of courses provides only a brief introduction to the techniques of linguistic analysis and will not place great emphasis on the formal properties of language. This introductory sequence is so structured as to allow students to explore various aspects of language as a human communication system, surveying such areas as bilingualism, language acquisition and many others. An introduction to each area is presented in a handbook which is part of an instructional unit called a module. In this part of the introductory sequence, students must complete four modules, including Sound I and Syntax I.

104-201A,B INTRODUCTION TO THE STUDY OF LANGUAGE II.* (3 credits). A continuation of 104-200A,B. Students must complete four additional modules, selection to be made in accordance with individual needs and interests.

104-202A,B/203A,B INTRODUCTION TO THE STUDY OF LANGUAGE III & IV. (3 credits each; Prerequisites: 104-200 and 201). A continuation of 104-200 and 104-201 for non-specialist students from outside the Department of Linguistics whose program requires 12 Linguistics credits. Students must complete four modules in each course (which must be different from the ones already covered in 200/201). Selection to be made in accordance with individual needs and interests.

104-205D INTENSIVE INUKTITUT (ESKIMO) FOR BEGINNERS.* (6 credits). An introduction to the basic structures of Inuttitut, with intensive drill and classroom practice in the use of the language. (Given only by special arrangement. Consult Department).

104-230A ANTHROPOLOGICAL LINGUISTICS.* (3 credits): registration limited. This course will introduce students to language and its place in culture. Major topics will include the following: human language as a unique system, the development of language in mankind and individuals, similarity and diversity among languages, the interdependence between language and culture, the ethnography of speaking, linguistic change.
Professor Ellis

104-250A GENERAL PHONETICS.* (3 credits). Intensive training in the identification and production of speech sounds, followed by an acoustical analysis of speech and study of the process of auditory perception. Demonstration sessions in the Phonetics Research Laboratory form part of the course. (Not open to students who have taken 104-350).
Professor Rigault

UPPER LEVEL LINGUISTICS COURSES

104-305D SELF-INSTRUCTIONAL LANGUAGE MODULE. (6 credits). A self-instructional course in the active control of a language required by the student and not offered by any department within the university. The course will be under the supervision of a staff-member, with performance modelled after that of a native speaker. *(Given only by splecial arrangement withthe Department to meet the needs of specific Honours programs).*

104-310A HISTORY OF LINGUISTICS.* (3 credits). Exploration of important linguistic issues through theories of language, past and present. In a historical perspective, this will show how certain crucial issues recur in different theories at different times and how theories can differ in the fundamental questions they ask. The work of major twentieth century linguists such as Saussure, Sapir, Bloomfield and Chomsky will be studied in their historical contexts.
Staff

104-321B LINGUISTICS APPLIED TO LANGUAGE LEARNING.* (3 credits). A critical study of the application of linguistic theory and description to first and second language learning and to theories of bilingualism with a look at second language learning strategies.
Staff

104-325B SOCIOLINGUISTICS. (3 credits; Prerequisite: one semester of linguistics or permission of instructor). This course will focus on linguistic correlates, determinants, and consequences of social behaviour. Major topics will include linguistic variation, the description of speech events, the determinants of stylistic and linguistic choice, types of multilingual communities and language planning. (Not open to students who have taken 104-241).
Professor Domingue

104-330A INDIAN LANGUAGES OF NORTH AMERICA. (3 credits; Prerequisite: one semester of linguistics or permission of instructor). An introduction to Indian languages of North America: a study of their distribution and classification with special attention to selected structural types; a history of scholarship in the field since the 17th Century; a consideration of certain socio-linguistic problems.
Professor Ellis

104-351B PHONOLOGY I. (3 credits; Prerequisite: 250A). Survey of the development of phonology: the concept of the phoneme, structural phonology, generative phonology. Introduction to the various techniques of phonological analysis. Discussion of current issues in phonological theory.
Professor Rigault

104-355A MORPHOLOGY: THEORY AND ANALYSIS OF WORD-STRUCTURE.* (3 credits). An introduction to the study of the internal structure of words, to the analytical techniques of various schools and to recent attempts to formulate a theory of word-structure.
Staff

104-360A SYNTAX I.* (3 credits). Introduction to the study of generative syntax of natural languages, emphasizing basic concepts and formalism: phrase structure rules, transformations, and conditionson rules.
Professor Freidin

104-371B EXPERIMENTAL LINGUISTIC PHONETICS. (3 credits; Prerequisite: 250A). Speech as a motor behaviour and as an acoustical phenomenon. Speech perception. Initiation to instrumental techniques of investigation(e.g. spectrographic analysis, speech synthesis) and interpretation of acoustic phonetic data. Training in experimental approaches to the solution of linguistic phonetics problems. Experimentation in the Phonetics Research Laboratory is an essential part of the course. Students are expected to conduct their own personal research leading to a term paper. Registration limited to a maximum of 12 students.
Professor Rigault

104-410B STRUCTURE OF A SPECIFIC LANGUAGE. (3 credits; Prerequisite: One year of introductory linguistics or permission of instructor).
Staff

104-455B SEMANTICS I. (3 credits; Prerequisite: 355A). Discussion of the basic notions and concepts necessary for the study of linguistic

semantics, its place in the theory of language and the delimitation of the domain of linguistic semantics as opposed to pragmatics; theory of communication or philosophical semantics. Presentation of the methods used in some work done in the field.

- **104-460A,B PROSEMINAR I IN A SELECTED FIELD.** (3 credits). Intensive study of a selected field or topic chosen to balance the requirements of the Honours program or provide for coverage of developing or less familiar areas of linguistic inquiry.
Staff

104-462B,A PROSEMINAR II IN A SELECTED FIELD. (3 credits).

- **104-470A INTRODUCTION TO NEUROLINGUISTICS.** (3 credits; Prerequisite: 12 credits in Linguistics). A study of neurolinguistic theories of competence and performance: language storage, speech production and comprehension. A linguistic analysis of aphasic syndromes. An investigation of the species-specificity of language: chimp and child. Modalities of language acquisition and language use, and their pathological dissolution. (No anatomy or physiology beyond High School biology is required).
Professor Paradis

104-471B FIELD METHODS OF LINGUISTICS. (3 credits; Prerequisite: 104-351B and 355A). Elicitation, recording and analysis of linguistic data under simulated field conditions; consideration of typical problems confronting the field analyst, preparation of a descriptive statement.
Professor Ellis

104-482D FIELD OR RESEARCH PROJECT. (6 credits).

104-491B LINGUISTIC THEORY I. (3 credits; Prerequisite: 6 credits in Linguistics or permission of instructor). Intensive investigation of various critical problems in different theories of language, such as whether language is innate, whether language determines thought, whether syntax is autonomous, how we can explain language acquisition, etc.
Professor Gopnik

104-530A PHONOLOGY II. (3 credits; Prerequisite: Linguistics 351B or permission of instructor). Review of the analytical techniques and formal devices of generative phonology; a critical evaluation of basic principles of the standard theory of phonology in the light of some proposed modifications; analyses of problems drawn from a wide variety of languages. (Not open to students who have taken 104-450A).
Professor Piggott

104-540A HISTORICAL LINGUISTICS I: THEORY AND METHODS. (3 credits; Prerequisite: Linguistics 351B and 360A, or permission of instructor). Introduction to the general principles involved in the study of language change and to the methods of historical reconstruction, illustrated by data from a wide variety of languages, including familiar Indo-European examples. (Not open to students who have taken 104-400A).
Staff

104-541B HISTORICAL LINGUISTICS II. (3 credits; Prerequisite: Linguistics 400A or permission of instructor). Investigation of language change in terms of the implications for a theory of grammar; review of some recent research in the areas of phonological and syntactic change. (Not open to students who have taken 104-401B).
Staff

104-571A/B SYNTAX II. (3 credits; Prerequisite: Linguistics 360A or permission of instructor). Extension and refinement of the theory of syntax developed in Syntax I – especially with respect to the theories of Binding and Case as they apply to bound anaphora, movement rules, pronominal reference, and infinitival complements. (Not open to students who have taken 104-381B).
Professor Freidin

104-580A THEORY OF SECOND LANGUAGE DEVELOPMENT. (3 credits). A study of research on second language acquisition and learning by children and adults. Topics include the question of critical periods, individual differences, the domain of conscious grammar, levels of application of linguistic theories, the relevance of neurolinguistic research, similarities and differences in first and second language development, types of linguistic competence, and the linguistic significance of errors. (Not open to students who have taken 104-420B or 104-680D).

Attention is drawn to the following courses which may be of interest as electives to students in Linguistics:

Courses in the linguistic study of specific languages (See under the various language departments.)

Mathematics	189-328B
Philosophy	107-210A,B
	107-300A
	107-304A
Psychology	204-214D
	204-340A
	204-341B
	204-425A
	204-428B
	204-455D

MATHEMATICS (189)

Burnside Hall, Room 1005, Telephone: 392-5369

General information, courses and course descriptions appear in the Science section of this An-

nouncement. The following programs of study are designed to provide students with every opportunity to enter a wide variety of fields.

MAJOR IN MATHEMATICS

Major revisions are contemplated in this program for 1982-83 which will not be finalized until later in the year. Prospective students should therefore make sure that they contact the Department concerning such changes.

Programs of study for students entering U1 in *1982-83.*

The compulsory courses are 189-120A,B, 189-121A,B, 189-221A,B, 189-222A,B, 189-245A,B.

Advisers will approve a program of 54 credits including 48 credits in Mathematics (excluding 120A,B, 121A,B, 221A,B) of which at least 36 credits will be selected from the following: 189-217A, 189-218B, 189-242A, 189-243B, 189-246A,B, 189-314A,B, 189-315A,B, 189-316B, 189-317A,B, 189-318A,B, 189-319B, 189-320A, 189-323A,B, 189-324A,B, 189-327B, 189-328B, 189-333A, 189-343A, 189-346B, 189-348A, 189-349B, 189-360A, 189-369D, 189-407B, 189-414B, 189-415A, 189-416A, 189-417A, 189-419B, 189-423A, 189-424B, 189-425A, 189-427B, 189-447B. The remaining 6 credits to be selected from Mathematics or a related discipline in consultation with the Adviser.

An honours course may be substituted for an equivalent major course; when qualified, students are encouraged to do so. Honours courses count without restrictions towards the 36 credits mentioned above.

Guidelines for Selection of Courses in the Major Program

All students are advised to include the following courses in their program: 189-246A,B, 189-314A,B, 189-315A,B, 189-317A,B 189-323A,B, 189-324A,B, 308-202A,B.

a) Students planning to pursue graduate studies are advised to include 189-242A, 189-243B and 189-333A in their program, and to consider substituting one or more honours courses for the corresponding courses in the Major program.

b) Students considering a career in teaching are advised to include in their program the following courses: 189-217A, 189-218B, 189-242A, 189-318A,B, 189-328B, 189-338A, 189-346B, 189-349B.

c) Students interested in probability and statistics are advised to also include in their program the following courses: 189-242A, 189-407B, 189-414B, 189-423A, 189-424B, 189-425A, 189-447B, as well as a course in programming languages such as 308-202A,B. With the instructor's permission the graduate courses 189-682A, 308-690A, 308-691B might also be included.

d) Students interested in applied mathematics are advised to include in their program some or all of the following courses: 189-218B, 189-242A, 189-316B, 189-319B, 189-323A,B, 189-324A,B, 189-327B, 189-407B, 189-414B, 189-415A, 189-416A, 189-417A, 189-419B, 189-427B, 308-202A,B.

e) Students interested in computer science are advised to register in the following courses: 189-318A,B, 189-327B, 189-328B, 189-417A, 189-427B, 308-202A,B, 302B; they should choose additional courses from 189-319B, 189-415A, 189-416A, 189-419B, 189-423A, 189-424B, 189-425A, 189-447B, 308-610A*, 308-640D*, 308-690A*, 308-691B* or 308-698A*, and 308-699*.

f) Students interested in careers in actuarial work, in industry or government are advised to select courses from the following list: 189-319B, 189-327B, 189-328B, 189-329D, 189-369D, 189-415A, 189-416A, 189-417A, 189-419B, 189-423A, 189-424B, 189-425A, 189-447B, 308-200A,B.

The student's attention is called to the fact that a B.Com. degree with a Major in Mathematics is available from the Faculty of Management. In addition, the Faculty of Music offers the degree of B.Mus. (Honours in Theory with Mathematics Option.)

**These courses require special permission from the instructors.*

HONOURS PROGRAM

The minimum requirement for entry into the Honours Program is that the student has completed with high standing the following courses: 189-120A,B, 189-121A,B, 189-221A,B.

Requirements for Honours in Mathematics

For an Honours Degree in Mathematics, students must obtain 90 course credits; at least 60 of these should correspond to Honours Courses, or their equivalent, not less than 45 to Honours courses in Mathematics. In addition to the latter, students may count towards their 60 credit Honours requirement:

i) half of the courses taken from the Major Program in Mathematics (including Computer Science courses) for which no equivalent Honours course exists;

ii) (with the approval of the Department of Mathematics) certain courses in other departments which are at an Honours level, and are closely linked to Mathematics;

iii) (with the approval of the Department of Mathematics) half the courses taken in other departments, which while not necessarily explicity mathematical in nature, are at an Honours level and broaden the student's scientific training. Students who transfer to

Honours in Mathematics from other programs will have credits for previous courses assigned, as appropriate, by the Department.

The following courses are compulsory: 189-250A, -251B, -254A, -255B, -371D, -372D.

The remain in the Honours Program, and to be awarded the Honours Degree, the student must maintain a 2.8 Grade Point Average in the approved Mathematics courses of the Honours program.

Guidelines for Selection of Courses in the Honours Program

a) The compulsory courses may be spread over the three years study.
b) Students taking 189-250A, -251B, and 189-254A, -255B, simultaneously are advised to register also for 189-258A, 259B.
c) Students are advised to include in their program the following courses: 189-356A, 357B, 374D, -380D.
d) Students interested in Statistics should register for 189-556A, 189-557B and 189-587A, 189-589B in addition to 189-356A and 189-357B.
e) Students in Applied Mathematics should register for someor all of the courses 189-574A, -575B, -578A, -579B, -585A, and 586B in addition to 189-374D. They are also advised to select courses in areas to which they can apply their mathematics.
f) Students interested in Computer Science should register for 308-250A.

JOINT HONOURS PROGRAM

MATHEMATICS AND PHILOSOPHY

Credit requirements are as follows: In the Department of Mathematics students must register for 34 or 36 credits including 189-250A, -251B, -254A, -255B, -371D or -372D, -489A and -490B. Six additional credits must be selected from the approved Honours courses in Mathematics.

In the Department of Philosophy students must register for 30 credits. Nine in Logic and Philosophy of Science, 9 in History of Philosophy, 6 in Metaphysics and Epistemology, plus 6 credits in Philosophy to be chosen in consultation with the adviser.

Students must consult an Honours adviser in both Departments.

MIDDLE EAST STUDIES PROGRAM

Advisers - P. NOBLE *(Political Science);* MIDDLE EAST STUDIES COMMITTEE *(Chairman);* P.C. SALZMAN *(Anthropology);* C.J. ADAMS *(Islamic Institute, Religious Studies);* S. LEVY *(Jewish Studies);* B. TRIGGER *(Anthropology).*

The Middle East Studies Program consists of a co-ordinated, interdisciplinary set of courses, including language, literature, history, religion, political science, anthropology and sociology, focusing upon the Middle East since the rise of Islam. From this set of courses are drawn various combinations which make up a Major Program in Middle East Studies, an Honours Program in Middle East Studies and Joint Honours Programs in Middle East Studies and Anthropology, Jewish Studies, Political Science, Religious Studies, or Sociology.

MAJOR PROGRAM

The major in Middle East Studies consists of a program of 54 credits. This includes 3 full courses (18 credits) in one Middle Eastern language, 5 full courses (30 credits) to be selected from the offerings in history, religion and the social sciences and 1 full course (6 credits) to be chosen from related courses dealing with the Third World.

JOINT HONOURS PROGRAMS

The joint honours programs involve 6 full courses (36 credits) in Middle East Studies and an equivalent number of courses in the companion discipline. The basic requirements on the Middle East Studies side are 3 full courses (18 credits) in one Middle Eastern language and 3 full courses (18 credits) to be selected from the offerings in history, religion and the social sciences.

HONOURS PROGRAM

The full honours program in Middle East Studies consists of 60 credits. Half of this program (30 credits) is in the language area, where a student must complete three years of one Middle Eastern language and two years of another (Arabic, Hebrew, Persian, Turkish). The other half of the program is in the area of history, religion and the social sciences.

ADVISERS

Students interested in following one of the above programs should consult the chairman of the Middle East Studies Committee - Professor Noble (Politicla Science), telephone 392-5237.

Courses

Consult departmental listings for more complete descriptions. Not all courses are available in any given year.

ANTHROPOLOGY

NOTE: Students are expected to take one of 151-202A, 209B or 212B as a prerequisite for 151-340B.

151-340B Middle Eastern Society and Culture. (3 credits).

HISTORY (ISLAMIC STUDIES)

397-510D History of Islamic Civilization: The classical Period. (6 credits).
397-511D History of Islamic Civilization: The Medieval Period. (6 credits).

LAW

NOTE: Students must apply to the Faculty of Law for permission to take this course.

490-001B Foreign Policy and the International Legal Process: The Middle East as a Case History. (3 credits). (Not open to students who have taken or are taking 491-408B).

POLITICAL SCIENCE

NOTE: Students are expected to take 160-227B and either 245A or 244B as prerequisites for the courses listed below.

160-340A Politics and Government in the Arab World. (3 credits).
160-341B Foreign Policy in the Arab World. (3 credits).
160-347A Israel, the Powers and the Middle East Conflict. (3 credits).

RELIGION (ISLAMIC STUDIES)

397-504D The Islamic Tradition. (6 credits).

LANGUAGES

ARABIC (ISLAMIC STUDIES)

397-521D Introductory Arabic. (6 credits).
397-522D Lower Intermediate Arabic. (6 credits).
397-623D Higher Intermediate Arabic. (6 credits).
397-624D Advanced Arabic. (6 credits).

HEBREW (JEWISH STUDIES)

135-200D Hebrew Language Intensive. (12 credits).
135-220D Introductory Hebrew. (6 credits).
135-320D Intermediate Hebrew. (6 credits).
135-340D Advanced Hebrew. (6 credits).

TURKISH (ISLAMIC STUDIES)

397-631D Introductory Turkish. (6 credits).
397-632D Lower Intermediate Turkish. (6 credits).
397-633D Higher Intermediate Turkish. (6 credits).
397-634D Advanced Turkish. (6 credits).

PERSIAN (ISLAMIC STUDIES)

397-641D Introductory Persian. (6 credits).
397-642D Lower Intermediate Persian. (6 credits).
397-643D Higher Intermediate Persian. (6 credits).
397-644D Advanced Persian. (6 credits).

MODERN LANGUAGES

Adviser: To be announced. For information please consult the Student Affairs Office, at 392-5088.

A. The Modern Languages Program is an interdisciplinary Major Program leading to a B.A. It is primarily a cultural one designed to broaden the student's general background in two foreign languages and associated areas in addition to providing a solid base in each one of the two languages the student wishes to pursue. To enter Graduate Studies or to pursue a career in translation or interpretation, further preparation is required.
B. The overall program is administered by a Chief Adviser who is assisted by representatives of the main Departments involved with the program.
C. To earn a B.A. with a Major in Modern Languages, students are required to take a minimum of 54 academic credits within the Program distributed as follows:
   18 credits in a Modern Foreign Language (except French and English)
   18 credits in a second Modern Foreign Language (except French and English)
   12 credits in Linguistics
   6 credits in the Social Sciences

MODERN LITERATURE

Director: Professor Davison,
English Department
853 Sherbrooke St. West
Montreal, PQ H3A 2T6

6 credits in English, 6 credits in French; 12 credits in English or French Literature; 18 credits in each of two modern foreign literatures.

MUSIC

Strathcona Music Building
555 Sherbrooke Street West
Montreal, PQ H3A 1E3
Telephone: 392-4501

Department of Theory – D.B. Minorgan *(Chairman)*
Department of Performance – R. Lawton *(Chairman)*

The following courses are offered by the Faculty of Music as electives for students in the Faculties of Arts, Science, and Education. They are also open to students from other faculties. Music courses not listed below may be taken by qualified students from other faculties providing they obtain permission from the relevant department in the Faculty of Music and from the Associate Dean of their own faculty. For a complete listing of the offerings of the Faculty of Music, please consult the *Faculty of Music Announcement.*

Courses

- *Denotes not offered 1982-83.*

List I

The courses in this list are available to any student in the Faculties of Arts, Science and Education. No music prerequisites, other than those listed under a specific course, are required.

210-201A,B BASIC MATERIALS OF WESTERN MUSIC. (3 credits; 3 hours). A combination of elementary theory and ear training (sightsinging and aural recognition), and basic piano skills. Some topics covered: notation of pitch and rhythm, intervals, scales and modes, concept of key, triads and seventh chords, introductory melody and accompaniment writing.
Ms. Judith Bercuvitz

210-211D INTRODUCTION TO THE ART OF MUSIC. (6 credits; 4 hours). A survey of historical styles and formal organization in Western art music from the Middle Ages to the present, including its function in church, court, theatre, and concert hall. Elements of theory (notation, texture, instruments, meter and rhythm, melody, harmony, and form) provide a basis for aural recognition of differing stylistic characteristics in the music studied. Emphasis on the music of the major composers in each period. (Not open to students who have taken 210-210A or 210-211B).
Professor Christopher Reynolds

- **210-310A MUSIC OF THE MIDDLE AGES AND THE RENAISSANCE.** (3 credits; 3 hours; prerequisite: 210-211 or by permission of the instructor). A study of the main developments in sacred and secular music in Western Europe from the early Christian era to the end of the sixteenth century. Topics include notation, instruments, performance practice, the relation of music to parallel developments in other arts, music and poetry, music and musicians within their social milieu, and music in its ecclesiastical and humanistic framework.
Professor Paul Helmer

- **210-311B MUSIC OF THE BAROQUE.** (3 credits; 3 hours; prerequisite: 210-211 or by permission of the instructor). The Baroque in music and performance, in the church, chamber and theatre and in different geographical regions (England, France, Germany, Italy). New genres (opera, sonata, concerto grosso), musical instruments, and the role of improvisation. Stylistic analysis of selected works by Monteverdi, Bach, Handel, Rameau, and Vivaldi.
Professor Mary Cyr

- **210-312A MUSIC OF THE CLASSICAL PERIOD.** (3 credits; 3 hours; prerequisite: 210-211 or by permission of the instructor). The course will survey the music written from the Pre-Classic period, beginning about 1750, to the death of Franz Schubert in 1828, and will include the music of Haydn, Mozart and Beethoven.
Professor Michelle Fillion

210-313A MUSIC OF THE ROMANTIC PERIOD. (3 credits; 3 hours; prerequisite: 210-211 or by permission of the instructor). A study of the romantic style in music, from its emergence in the first decades of the 19th century in the wake of literary reform and Beethoven's legacy, to post-romanticism (ca. 1900). Romantic transformations of traditional forms (symphony, sonata, chamber music, opera and oratorio) and the appearance of new genres (symphonic poem, lied, character piece, and music drama) at the hands of major Romantic composers. New national styles.
Professor Michelle Fillion

210-314B MUSIC OF THE 20th CENTURY. (3 credits; 3 hours; prerequisite: 210-211 or by permission of the instructor). A survey of "serious" music of Europe and North America from the late 19th Century to the present day. Discussion and lectures will include sociological and artistic background of various composers or "schools" of composition, compositional techniques and new notation, performance practice, as well as stylistic analysis of selected works.
Professor Bruce Minorgan

213-242D ELECTRONIC MUSIC. (6 credits; enrolment limited to 12; 3 hours lecture plus 3 hours studio time. Providing space is available, students may enrol for this course with the permission of the instructor). Studies in electro-acoustic musics. Some areas covered will include concrete music, acoustics and psycho-acoustics, soundscaping, pure electronic music, electronic extensions for real-time performance and remote recording.

List II

The courses in this list are intended for students who have at least high school Matriculation Music or the equivalent. Students who do not have the formal music prerequisites require the

permission of the Chairman of the Department of Theory to register for any of these courses.

THEORY

211-110A,B MELODY AND COUNTERPOINT. (3 credits; prerequisite: Matriculation Music or McGill Conservatory Theory Secondary V or its equivalent; corequisites: 212-128 or 212-129 AND 211-170; 4 hours). Analysis of melodies from various eras and cultures, and of two-part counterpoint, including styles and techniques of 20th Century counterpoint. Written exercises in melody and two-part counterpoint will be required. Notation and tuning and temperament.
Professor Donald Patriquin (Co-ordinator) and Staff

211-111A,B ELEMENTARY HARMONY AND ANALYSIS. (3 credits; prerequisite: 211-110; corequisites: 212-130 or 212-131 AND 211-170; 4 hours). This course will cover diatonic chords, harmonic progression, the concept and practice of tonality, simple modulation, seventh chords and secondary dominants. Small forms from c.1700 to the early 19th Century will be analyzed. Written four-part exercises will be required.
Professor Donald Patriquin (Co-ordinator) and Staff

211-210A,B TONAL THEORY AND ANALYSIS I. (3 credits; prerequisites: 211-110 and 211-111; corequisites: 212-228 or 212-229 AND 211-170; 3 hours). Compositional resources of early and mid-18th Century music. Thorough review of elementary harmonic procedure. Introduction to chromatic alteration and linear chords. Introduction to analysis of imitative and invertible counterpoint. Analysis of common forms of the period c.1700-1770, including principal Baroque forms, but not including the Classical sonata.
Professor Janet Schmalfeldt (Co-ordinator) and Staff

211-211A,B TONAL THEORY AND ANALYSIS II. (3 credits; prerequisite: 211-210; corequisites: 212-230 or 212-231 AND 211-171; 3 hours). Compositional resources of late 18th and early 19th Century music. Analysis of forms common to the period c. 1770-1830, including Classical sonata forms in several media. Writing of short pieces for keyboard, piano and voice, string quartet.
Professor Janet Schmalfeldt (Co-ordinator) and Staff

Unless otherwise indicated the following courses are prerequisites to 300-, 400- and 500- level theory courses: 211-211 or 213-240 AND 212-230 or 212-231 AND 211-171.

211-310A,B MIDDLE AND LATE 19th CENTURY THEORY AND ANALYSIS. (3 credits; 3 hours). Expanded harmonic resources of the late 19th Century (e.g., foreign modulation, chromatic harmony). Analysis of characteristic small and large forms. Development of writing and analytical skills with a goal toward perceiving how levels of musical structure interact.
Professor John Rea (Co-ordinator) and Staff

211-311A,B 20th CENTURY THEORY AND ANALYSIS. (3 credits; prerequisite: 211-310; 3 hours). Exploration of 20th Century systems of pitch organization and attitudes toward counterpoint (e.g., polytonality, modal systems, neoclassical tonality, serialism, linear counterpoint, etc.). Examination of the relationship of these systems to earlier practices. Development of written and analytical skills for the purpose of gaining insight into 20th Century principles and techniques.
Professor John Rea (Co-ordinator) and Staff

HISTORY

214-184A HISTORY SURVEY (MEDIAEVAL, RENAISSANCE, AND BAROQUE). (3 credits; corequisites: 211-110 AND 212-128 or 212-129 OR permission of the instructor; 3 hours). Representative works from the Carolingian Renaissance to 1750 and their relation to the social and cultural milieu. Basic reference works. Developments in notation, instruments, and performance practice.
Professor Paul Helmer

214-185B HISTORY SURVEY (CLASSICAL, ROMANTIC, AND 20th CENTURY). (3 credits; corequisites: 211-111 AND 212-130 or 212-131 OR permission of the instructor; 3 hours). An historical and stylistic investigation of music and musical life from circa 1750 to the present. The course will commence with the transition to the Classical period, the period of C.P.E. Bach and the Mannheim, Berlin, and Viennese symphonists, and conclude with recent developments, including electronic and computer applications.
Professor Bruce Minorgan

Unless otherwise indicated the following courses are prerequisites to 300- and 400- level history courses: 214-184 AND 214-185 AND 211-211 or 213-240 AND 212-230 or 212-231.

214-386A CHAMBER MUSIC LITERATURE. (3 credits; 3 hours). The course will concentrate on the forms and media for chamber ensembles during the 18th, 19th and 20th centuries: accompanied sonatas, duos, trios, quartets, quintets, sextets, divertimenti, and works for small chamber orchestra. Major works of the most representative composers will be discussed.
TBA

- **214-387A OPERA LITERATURE.** (3 credits; 3 hours). Selected research topics in opera history, production and sociology.

214-389B ORCHESTRAL LITERATURE. (3 credits; 3 hours). A study of the literature for orchestra alone, composed since the early 18th Century. The material will be divided as follows: 1) orchestral music to the time of Beethoven; 2) orchestral music from 1800 to 1860; 3) orchestral music from 1860 to 1900; 4) orchestral music of the 20th Century.
TBA

214-390B VOCAL LITERATURE. (3 credits; 3 hours). Forms, idioms and styles characteristic of solo and chamber song in Western art music. Emphasis will be on the literature available in central Europe, the British Isles and North America from the 16th through the 20th centuries.
Professor Michelle Fillion

- **214-391A CANADIAN MUSIC.** (3 credits; 3 hours). A survey of music in Canada from the 16th Century to the present. Current musical organizations and institutions, and contemporary Canadian music will be stressed. Time permitting, brief reference will be made to the folk music of indigenous and immigrant groups.
Professor Bruce Minorgan

- **214-393B HISTORY OF JAZZ.** (3 credits; *Prerequisite for non-Faculty of Music students:* 210-211 Introduction to the Art of Music OR permission of the instructor; 3 hours). A study of the development of jazz from its origin in the late 19th Century in America to the present day. Subjects such as ragtime, blues, the Twenties, big-band, swing, bebop, cool jazz, third stream, hard bop and free jazz will be considered.

- **214-395A KEYBOARD LITERATURE BEFORE 1750.** (3 credits; 3 hours). The solo repertoire for organ, harpsichord, and clavichord from 1400 to 1750: intabulation, *cantus firmus* treatment, indigenous keyboard genres, German organ literature, French harpsichord repertoire.
Professor Paul Helmer

214-396B KEYBOARD LITERATURE AFTER 1750. (3 credits; 3 hours). The solo repertoire for keyboard instruments from 1750 to the present: the development of an indigenous pianoforte literature, keyboard sonatas, character pieces, retrospective and progressive tendencies in organ music, 20th Century literature.
Professor Paul Helmer

214-397A CHORAL LITERATURE. (3 credits; 3 hours). The development of sacred and secular choral music from the Middle Ages to the present. Selected liturgical and secular works will be included; the Mass, the cantata, the oratorio and other genres. Form and stylistic considerations will be examined in representative choral works.
Professor Donald Mackey

- **214-398A WIND ENSEMBLE LITERATURE.** (3 credits; 3 hours). The development of music for mixed ensembles of wind instruments from the Middle Ages to the present day. Special emphasis will be given to music for wind chamber ensembles and band literature. The development of form and technique in wind music will be reviewed through the study of representative compositions for various combinations of wind instruments.

- **214-399B CHURCH MUSIC.** (3 credits; Additional prerequisite: 214-397 or permission of the instructor; 3 hours). Problems and issues of music in the church: hymnology, the history and role of music in different liturgies, musical and theological issues in the selection of church music, criteria for the adequate performance of hymns and other music in church services.
Professor Donald Mackey

- **215-381A PERFORMANCE PRACTICE OF MEDIAEVAL AND RENAISSANCE MUSIC.** (3 credits; 3 hours). Instrumentation, scoring, notation, rhythmic and metrical accentuation, performance medium, ornamentation and diminution, tempo and the tactus, and improvisatory practices. Selected repertoires will be investigated and modern editions and recordings of these repertoires evaluated (e.g., Machaut's secular songs, Byrd's instrumental fantasias, etc.). Editorial techniques will be analyzed.
Professor Paul Helmer

- **215-382B PERFORMANCE PRACTICE OF BAROQUE MUSIC.** (3 credits; 3 hours). Instrumentation, *basso continuo,* notational practices, articulation, Italian ornamentation in slow movements, French ornamentation, inégalité will be amongst the topics studied. Discussion and evaluation of modern editions, class performances, and recordings.
Professor Mary Cyr

215-383A PERFORMANCE PRACTICE OF CLASSICAL MUSIC. (3 credits; 3 hours). The performance tradition from 1760 to 1810 based on the treatises, journals, critical and aesthetic writings of the time: ornamentation, tempo, rhythmic conventions, dynamics, instrumentation, make-up and balance of orchestras.
Professor Paul Helmer

Music Ensembles

Arts and Science students may, with the permission of the instructor and the Associate Dean, participate in one of the following ensembles in a given year. Students should arrange through the Faculty of Music office (392-4501) for the necessary audition usually held during the week prior to the beginning of classes. Normally both the A and B sections of an ensemble are taken in the same academic year.

The deadline for withdrawing from ensembles is the end of the second week of classes in any term.

- **243-276A, 376B BAROQUE CHAMBER ORCHESTRA.** (2 plus 2 credits; prerequisite: audition; 3 hours).
Professor Mary Cyr

243-278A, 378B WIND SYMPHONY. (3 plus 3 credits; prerequisite: audition; 6 hours).
Professor Robert Gibson

- **243-287A, 387B CONTEMPORARY CHAMBER**

MUSIC CHOIR. (2 plus 2 credits; prerequisite: audition; 2-3 hours).

243-289A, 389B WOODWIND ENSEMBLES. (2 plus 2 credits; prerequisite: audition; 2-3 hours).
Professor Gerald Danovitch and Staff

243-290A, 390B CONCERT BAND. (3 plus 3 credits; prerequisite: audition; 6 hours).

243-291A, 391B BRASS ENSEMBLES. (2 plus 2 credits; prerequisite: audition; 2-3 hours).
Professor Robert Gibson and Staff

243-293A, 393B CHORAL ENSEMBLES. (2 plus 2 credits; prerequisite: audition; 4 hours). Students enrolling in Choral Ensembles will be assigned to one or more of the following groups.
Professor Fred Stoltzfus and Staff

Chamber Singers: a group of approximately 24 mixed voices which explores the *a capella* repertoire of all periods as well as works with chamber accompaniment.

Concert Choir: an ensemble of approximately 40 voices (S.A.T.B.) which performs the repertoire from all periods appropriate to a group of this size.

University Chorus: a mixed chorus of approximately 100 which performs a variety of choral material including both traditional and popular selections.

Symphonic Chorus: a combination of the above comprising approximately 160 singers which performs the major choral works (oratories, masses, symphonies, etc.) which require forces of this scope.

Women's Chorale: an ensemble of approximately 40 women stressing the fundamentals of singing and ensemble participation. Works are chosen from the substantial repertoire available for women's voices.

Choral Training Class: Students in the Symphonic Chorus whose choral experience is limited will be assigned to training classes specifically designed to help their progress in this area. These classes meet during the same 4-hour block as the regular choral rehearsals.

243-294A, 394B CONTEMPORARY MUSIC ENSEMBLE. (2 plus 2 credits; prerequisite: audition; 2-4 hours).
Professors Alcides Lanza and Eugene Plawutsky

243-295A, 395B JAZZ ENSEMBLE. (2 plus 2 credits; prerequisite: audition; 3 hours).
Professor Gerald Danovitch

243-296A, 396B OPERA STUDIO. (3 plus 3 credits; prerequisite: audition; 3-6 hours).
Professors Edith Della Pergola, Luciano Della Pergola and Staff

243-297A, 397B ORCHESTRA. (3 plus 3 credits; prerequisite: audition; 6 hours).
TBA

243-299A, 399B STRING ENSEMBLES. (2 plus 2 credits; prerequisite: audition; 2-3 hours).
Professor Stephen Kondaks and Staff

NORTH AMERICAN STUDIES PROGRAM

Program Committee – THOMAS VELK *(Chairman of Program);* P. DAVENPORT; S. RANDALL; A. RIGGS; D. Von ESCHEN; W. WEEMS

This interdisciplinary major program is being offered to give undergraduates an opportunity to gain a fairly comprehensive view of the growth and achievement of Canadian or United States civilizations, or a combination of both. For a fuller description of Canadian Studies, see Canadian Studies Program section.

The other choices are: 1) an option in U.S. Studies, concentrating on courses in the American field, or 2) an option in North American Studies in which courses from both areas are elected, or 3) an option which includes an Internship Semester, spent away from McGill, in attendance at one of several outstanding co-operating universities, where a work-study program is arranged with a private or public agency. The work-study experience is designed to serve each student's particular career goals.

In taking the U.S. Studies Option the student will select a minimum of 54 credits dealing with the United States. These will be drawn from the Departmental offerings listed below.

In the North American option courses selected should discuss Canada and the United States.

In taking an internship, the student will earn 16 credits and spend a semester away from McGill at one of several universities including Duke, Dartmouth, Carleton, Georgetown or American university. Some of these special semesters include an internship program: A work-study experience, under faculty direction, at a congressional or parliamentary office, with a lobbyist, or jurist or journalist. In some cases, there is a partial forgiveness of tuition fees at the transfer school.

Please consult Professor Velk, Department of Economics.

Courses

For more information concerning courses, please turn to listings under departmental headings.

NORTH AMERICAN STUDIES

110-529D THE LITERATURE OF REFORM. (3 credits). Is American devotion to the enlargement of the scope of liberty less popular and universal than her dedication to universal acquisition of equality? To examine that question, we

hypothesize two separate streams to exist in late 19th century American Reform literature, one pragmatic, individualistic and Jeffersonian; the other radical, statist and Hamiltonian. That literature is, in part, a reaction to America's sudden post civil war change from a simple rural society of independent farmers to a complex urban interdependent web of economic men. We test this hypothesis by a reading of Samuel Clemens, Edward Bellamy, Walt Whitman, the Adams Brothers, Ambrose Bierce, Hamlin Garland, Bret Hart and others. The course will be introduced by readings from De Tocqueville, Hamilton and Jefferson. The social, political and economic background for the literature of reform will be found in readings from Henry George, John Bates Clark, Jacob Riis and Francis Parkman. This course is required of all North American Studies Students.
Professors Velk (Economics) and Riggs (History)

Consult departmental listings for more complete descriptions. Not all courses are available in any given year.

ANTHROPOLOGY

151-224B Women in Cross-Cultural Perspective. (3 credits).
151-236B Indigenous Peoples of North America. (3 credits; *Prerequisite:* 183-236A; both courses must be taken to obtain credit for either).
151-317A Prehistory of North America. (3 credits).
151-436B Seminar on North American Native Peoples. (3 credits).
151-552B Problems in the Prehistory of Eastern North America. (3 credits).

ARCHITECTURE

301-372B History of Architecture in Canada. (2 credits; Prerequisite: 301-233B).

ART HISTORY

125-225B Canadian Art. (3 credits).

ECONOMICS

154-200D or 154-250D is prerequisite to all upper level courses in Economics except those for which other provision is made in the course description.
154-205D An Introduction to Applied Political Economy (6 credits).
154-211D Introduction to Canadian Economic History. (6 credits).
154-302D Money and Banking. (6 credits).
154-304D Canadian Economic Policy. (6 credits).
154-305D Government and Business. (6 credits).
154-306D Labour Economics and Institutions. (6 credits).
154-311A United States Economic Development. (3 credits).
154-312D Political Economy of Dependence in the Western Hemisphere. (6 credits).
154-321D The Québec Economy. (6 credits).
154-352D Macroeconomics. (6 credits).
154-404A Transportation. (3 credits).
154-403D Public Finance. (6 credits).
154-431A Seminar in Canadian Economic History. (3 credits).
154-505B Resource Economics. (3 credits).
154-568A Urban and Regional Economics. (3 credits).

ENGLISH

110-225A American Literature I. (3 credits).
110-226B American Literature II. (3 credits).
110-228A Canadian Literature I. (3 credits).
110-229B Canadian Literature II. (3 credits).
110-275D Communications and Literature. (6 credits).
110-323A 20th Century American Poetry (3 credits).
110-324B 20th Century American Prose. (3 credits).
110-325D Modern North American Fiction. (6 credits).
110-327D The Development of Prose Fiction in Canadian Literature. (6 credits).
110-329D 20th Century Canadian Literature. (6 credits).
110-422A Studies in 19th Century American Literature. (3 credits).
110-423B Studies in 19th Century American Literature. (3 credits).
110-525B American Literature. (3 credits).
110-527A Canadian Literature. (3 credits).
110-528A Canadian Literature. (3 credits).
110-539D The Folk Ballad Tradition in Great Britain and North America. (6 credits).

FRENCH

125-204A Civilisation Québécoise I. (3 crédits).
125-205B Civilisation Québécoise II. (3 crédits).
125-207D Le français par les textes. (6 crédits).
125-315A,B Le cinéma québécois. (3 crédits).
125-328D Histoire de la civilisation québécoise. (6 crédits).
125-370A La littérature québécoise jusqu'en 1940. (3 crédits).
125-371B La littérature québécoise depuis 1940. (3 crédits).
125-372D Le roman québécois jusqu'en 1945. (3 crédits).
125-373B Le roman québécois (1945-1960). (3 crédits).
125-377A La critique littérature québécoise. (3 crédits).
125-378A Le conte québécois. (3 crédits).

125-382D Roman québécois depuis 1960. (6 crédits).
125-470A Poésie québécoise de Crémazie à Saint-Denys-Garneau (1850-1940). (3 crédits).
125-471B Poésie québécoise d'Alain Grandbois à nos jours (depuis 1940). (3 crédits).
125-475A Littérature française et québécoise. (3 crédits).
125-485A L'essai québécois avant 1960. (3 crédits).
125-486B L'essai québécoise depuis 1960. (3 crédits).

FRENCH CANADA STUDIES PROGRAM

Consult page 38 of this Announcement.

GEOGRAPHY

182-216A Geography of Location. (3 credits).
183-217IB Introduction to Urban Geography. (3 credits).
183-236A Indigenous Peoples of North America. (3 credits). Linded with 151-236B (both must be taken).
183-309A Canada: Geographic Foundations. (3 credits).
183-311B Geographic Attributes of the Canadian Economy. (3 credits).
183-325A Physical Geography of Québec. (3 credits).
183-326A Human Geography of Québec. (3 credits).
183-333A Montreal Urban Field Studies. (3 credits).
183-403A Land-use Systems in Arctic and Subarctic Canada. (3 credits).
183-483B Historical Geography. (3 credits).

HISTORY

101-202A Canada to 1867. (3 credits).
101-203B Canada Since 1867. (3 credits).
101-211A The U.S. to 1865. (3 credits).
101-221B The U.S. Since 18675. (3 credits).
101-302B Canadian Business History. (3 credits).
101-303A Québec Since 1840. (3 credits).
101-309B Canada and the British Empire. (3 credits).
101-311A Theodore Roosevelt and the Progressive Era. (3 credits).
101-322B Canada and the American Presence Since 1939. (3 credits).
101-331B F.D. Roosevelt and the New Deal. (3 credits).
101-333A Themes in Canadian Social and Economic History. (3 credits).
101-341A Themes in U.S. Social and Economic History, 1800-1877. (3 credits).
101-342A The History of Canada's External Relations 1867-1939. (3 credits).
101-343B Ideas and Methods in Canadian History. (3 credits).
101-351B Themes in U.S. Social and Economic History, 1877-1960. (3 credits).
101-352D Emergence of English Canada: 1791-1867. (6 credits).
101-362B The Canadian West 1870-1970. (3 credits).
101-363D Contemporary Canada; 1890-1970. (6 credits).
101-432D History of the Atlantic Provinces. (6 credits).
101-441A The Beginnings of Industrial Society in Canada. (3 credits).
101-442B Industry and Social Change in Canada. (3 credits).
101-461D Seminar: Topics in Modern American Social History. (6 credits).

POLITICAL SCIENCE

160-211D Comparative Government and Politics. (6 credits).
160-221D Government of Canda. (6 credits).
160-318A Local Government in Comparative Perspective. (3 credits).
160-320A Canadian Political Process. (3 credits).
160-321B Issues in Canadian Public Policy. (3 credits).
160-325D Government and Politics of the United States. (6 credits).
160-327A The Principles of Public Administration. (3 credits).
157-336B Québec and Canada. (3 credits).
160-337B Canadian Public Administration. (3 credits).
160-365B Democratic Theory. (3 credits; prerequisite: 160-231D).
160-415B Political Parties. (3 credits).
160-421B Honours Seminar: Canadian Politics and Government. (3 credits).
160-466B Public Policy Analysis. (3 credits).
160-469A The Politics of Regulation. (3 credits).

SOCIOLOGY

166-210A,B Sociological Perspectives. (3 credits).
166-217A Canadian Mass Communications. (3 credits).
166-221B Class and Politics in the United States. (3 credits).
166-223B Social Stratification. (3 credits).
166-230A Class, Ethnicity and Politics in Canada and in Québec. (3 credits).
166-233B Canadian Society. (3 credits).
166-321A Women and Work. (3 credits).
166-326A Political Sociology. (3 credits).

166-327A Sociology of the Jews in North America. (3 credits).
166-520A Migration and Immigrant Groups. (3 credits).

NORTHERN STUDIES (197)

197-490A SEMINAR IN NORTHERN STUDIES I. (3 credits).

197-491B SEMINAR IN NORTHERN STUDIES II. (3 credits).

Please consult section on Northern Studies in the Science part of this Announcement for more detailed information.

PHILOSOPHY (107)

Professors - HARRY M. BRACKEN; MARIO BUNGE: ALASTAIR McKINNON *(Chairman);* DAVID FATE NORTON; J.A. TRENTMAN

Associate Professors - GEORGE DIGIOVANNI; ANIL K. GUPTA, *(on leave);* R. STORRS McCALL; J. McGILVRAY; WILLIAM SHEA; JEREMY WALKER *(on leave)*

Associate Members - KONSTANTIN ARVANITAKIS *(Psychiatry);* LAWRENCE KAPLAN *(Jewish Studies)*

Samuel Bronfman Building, 1001 Sherbrooke St. West, Montreal, PQ, H3A 1G5. Telephone: 392-5170.

MAJOR IN PHILOSOPHY

54 credits, 42 in philosophy and 12 in philosophy or a related subject, normally taken as follows:

U1: 6 credits at 200 level
3 credits in logic
6 credits in Greek or 17th/18th century philosophy
U2: 12 optional credits in philosophy
6 credits in philosophy or a related subject
U3: 6 credits at 500 level
9 further credits in philosophy
6 credits in philosophy or a related subject

Major Adviser: Professor DiGiovanni (392-5155).

Major in Philosophy and Psychology*

U2 Courses: Philosophy 107-231B; Psychology 204-302A, 303B; plus 6 credits to be selected from: Philosophy 107-300A, 360A, 361B, 366A, 367B; Psychology 204-301B, 337A, 330A, 332A

U3 Courses: Philosophy 107-321D; plus 3 credits from Philosophy courses. Psychology 204-400B, 403A; plus 6 credits to be selected from 401D, 404B or 425A; plus 3 credits in Psychology or Philosophy.

**This program is in the process of being phased out.*

HONOURS IN PHILOSOPHY

60 credits, normally taken as follows:

U1: 6 credits at 200 level
3 credits in logic
6 credits in Greek or 17th/18th century philosophy
3 credits in value theory at 200 level
U2: 6 credits from 350/360 level courses
3 credits in logic
3 credits in value theory at 300 level
6 optional credits in philosophy
U3: 6 credits at 500 level
6 credits in Honours Tutorial with Thesis
12 optional credits in philosophy

JOINT HONOURS IN PHILOSOPHY

36 credits:

6 credits at 200 level
3 credits in logic
6 credits in Greek of 17th/18th century philosophy
21 optional credits in philosophy

Joint Honours students must consult both departments for detailed arrangements.

Honours Adviser: Professor Trentman (392-5167).

ADMISSION TO HONOURS AND JOINT HONOURS

3.0 CGPA. Students must maintain 3.0 CGPA and 3.0 GPA plus 70% average in philosophy courses.

Course Descriptions

• *Denotes not offered 1982-83.*

107-200A INTRODUCTION TO PHILOSOPHY I. (3 credits). The course will deal with some of the central problems of philosophy: the mind-body problem, freedom, scepticism and certainty, fate, time and the existence of God.
Professor McCall

107-201B INTRODUCTION TO PHILOSOPHY II. (3 credits). An introductory discussion of problems of knowledge, belief, scepticism and meaning.
Professor McGilvray

107-210A,B INTRODUCTION TO DEDUCTIVE LOGIC. (3 credits). Propositional and predicate logic: formalization of arguments, truth tables, natural

deduction and related topics. (Not open to students who have taken or are taking 189-318, 489, 490).
Professor McCall

- **107-211B PHILOSOPHY OF LOGIC.** (3 credits).

107-220A INTRODUCTION TO HISTORY AND PHILOSOPHY OF SCIENCE, Part I. (3 credits). A survey of the rise of the scientific outlook from the ancient Greeks to the Scientific Revolution in the Seventeenth Century with special emphasis on Aristotle and Galileo.
Professor Shea

107-221B INTRODUCTION TO HISTORY AND PHILOSOPHY OF SCIENCE, Part II. (3 credits). A survey of the development of modern science since the Eighteenth Century with special emphasis on the theory of evolution and the rise of atomic physics.
Professor Shea

107-230B INTRODUCTION TO MORAL PHILOSOPHY. (3 credits). Some of the main issues of moral philosophy as discussed in Plato, Kant, and Kierkegaard.
Professor McKinnon

- **107-231A INTRODUCTION TO MORAL PHILOSOPHY.** (3 credits).

107-237A ETHICS AND BUSINESS. (3 credits). An introduction to moral philosophy and selected moral issues that arise in business or the professions.

- **107-240A SOCIAL AND POLITICAL PHILOSOPHY.** (3 credits).
- **107-241B SOCIAL AND POLITICAL PHILOSOPHY.** (3 credits).
- **107-243A INTRODUCTION TO BIOMEDICAL ETHICS.** (3 credits).
- **107-270B INTRODUCTION TO ANALYTIC PHILOSOPHY.** (3 credits).

107-300A PHILOSOPHY OF LANGUAGE. (3 credits). *Topic for 1982-83:* A survey of recent work in the philosophy of language, including theories of meaning, the problem of reference, and topics in language requisition.
Professor McGilvray

107-303A PHILOSOPHY OF MIND. (3 credits). *Topic for 1982-83:* Materialism, Personal Identity, and Explanation. Discussion of recent efforts to defend a materialist version of the mind-brain identity thesis, questions of personal identity, and of reductionism in the explanation of human action.
Professor McGilvray

107-304B CHOMSKY. (3 credits; one course in philosophy). Philosophical aspects of Chomsky's contributions to psychology, linguistic theory, theories of human nature, and to politics.
Professor Bracken

107-310B INTERMEDIATE LOGIC. (3 credits: Phil. 210 or equivalent). A non-technical introduction to some logical topics: quantification theory, natural deduction, the theory of descriptions, the theory of definition, soundness and completeness, elementary set theory; and one of the following: Gödel's incompleteness theorem, modal logics and their semantics. (Not open to students who have taken or are taking 189-318, 489, 490).
Professor McCall

- **107-321D PHILOSOPHY OF SCIENCE AND TECHNOLOGY.**
- **107-322D METHOD AND METAPHYSICS IN THE SCIENTIFIC REVOLUTION.** (6 credits).
- **107-324A PHILOSOPHY OF SOCIAL SCIENCE I.** (3 credits).

107-325B PHILOSOPHY OF SOCIAL SCIENCE II. (3 credits). *Topic for 1982-83:* The main philosophies of social science, in particular holism (or collectivism), individualism, and systemism. Topics include: the concepts of social system, societal trends and laws, rules of social behavior, social structure and history, and the nature of culture. Special study of methodological and philosophical problems of economics.
Professor Bunge

107-326A THE CULTURAL IMPACT OF TECHNOLOGY. (3 credits). Some episodes in the development of technology illustrating the rise of mechanization and its impact on culture.
Professor Shea

- **107-330B (107-407B) PHILOSOPHY AND LITERATURE.** (3 credits).
- **107-332A PHILOSOPHY OF RELIGION I.** (3 credits).
- **107-333B PHILOSOPHY OF RELIGION II.** (3 credits).

107-334A ETHICS I. (3 credits; prerequisite: one full course in philosophy).

- **107-336A AESTHETICS I.** (3 credits).
- **107-337B AESTHETICS II.** (3 credits).
- **107-343A PHILOSOPHY AND MEDICINE.** (3 credits).
- **107-344B PHILOSOPHY OF POLITICS.** (3 credits).
- **107-346A PHILOSOPHY OF HISTORY I.** (3 credits).
- **107-347B PHILOSOPHY OF HISTORY II.** (3 credits).

107-348B PHILOSOPHY OF LAW. (3 credits). A discussion of the nature of justice and law, and of the relationship between them. (This course is intended for students with a non-professional interest in law, as well as for those considering law as a profession).

107-354A PRESOCRATICS AND PLATO. (3 credits). A survey course concentrating on selected texts.
Professor Trentman

107-355B ARISTOTLE AND LATER GREEK PHILOSOPHY. (3 credits). A survey course concentrating on selected texts.
Professor Shea

107-356A AUGUSTINE TO AQUINAS. (3 credits). Examination of selected works of the great Christian, Moslem and Jewish thinkers.
Professor Trentman

107-357B POST-AQUINAS TO RENAISSANCE. (3 credits). A survey of philosophy from approximately 1300 to 1630. The topics discussed will include nominalism, humanism, new attitudes towards Plato and Aristotle, the influence of the revival of sceptism and of the Reformation, and the legal and political philosophy of the period. The course will also consider whether there was a Renaissance and, if there was, what it might have been.
Professor Trentman

107-360A SEVENTEENTH CENTURY PHILOSOPHY. (3 credits). A survey course concentrating on selected texts from Montaigne, Descartes, Malebranche, Leibniz, Spinoza, Locke, Bayle, and Berkeley.
Professor Bracken

107-361B EIGHTEENTH CENTURY PHILOSOPHY. (3 credits). A survey course concentrating on selected texts from Hume, Reid, Hutcheson, and the Scottish Enlightenment.
Professor Norton

- **107-366A KANT TO HEGEL.** (3 credits).

107-367B POST-HEGELIAN PHILOSOPHY. (3 credits). A study of the Young Hegelians, Marx, Schopenhauer, Kierkegaard and Nietzsche.
Professor Di Giovanni

107-370A PROBLEMS IN ANALYTIC PHILOSOPHY I. (3 credits). *Topic for 1982-83:* Materialism and Science. An examination of materialism and its relation to contemporary science. Subjects to be discussed: the definition of the concepts of mind and culture, the ontological status of concepts, and the so-called ontological commitment of logic and mathematics.
Professor Bunge

107-371B PROBLEMS IN ANALYTIC PHILOSOPHY II. (3 credits). *Topic for 1982-83:* The Mind-body Problem. A discussion of the various doctrines on the relations of mind to body. Special attention to the psychobiological (or neuropsychological) approach. Problems to be discussed: the various accounts of behaviour, perception, motivation, ideation, and volition. Alternative approaches, in particular behaviorism and congnitivism, will be examined.
Professor Bunge

- **107-374A PHENOMENOLOGY.** (3 credits; prerequisite: one previous course in philosophy). The course will explore the "Phenomenological Movement" both historically and critically. An attempt will be made to identify the nature of Phenomenology, and to contrast it with other forms of Philosophy. The class will also consider the question of how Phenomenology became at some point "existential".

107-375A EXISTENTIALISM. (3 credits; prerequisite: one course in philosophy). Special attention will be given to contemporary proponents of Existentialism, and also to the question of how contemporary Existentialism is related to Phenomenology. However, an effort will also be made to recognize a tradition of "existential thought" running through the history of Western Philosophy
Professor DiGiovanni

- **107-382A PROBLEMS IN PHILOSOPHY I.** (3 credits). credits).
- **107-383B PROBLEMS IN PHILOSOPHY II.**

107-397A,B, 107-398A,B TUTORIALS. (3 credits). Open to second year Full Honours students in Philosophy, and to other students, with consent of the Department.
Staff

107-399D TUTORIALS. (6 credits). Open to second year Full Honours students in Philosophy, and to other students, with consent of the Department.
Staff

107-497A,B, 107-498A,B TUTORIALS. (3 credits). Open to Third Year Full Honours students in philosophy, and to other students with consent of the Department.
Staff

107-499D TUTORIALS. (6 credits). Open to Third Year Full Honours students in Philosophy, and to other students with consent of the Department.
Staff

107-500A METAPHYSICS, DIALECTICS, LOGIC AND EPISTEMOLOGY. (3 credits). *Topic for 1982-83:* Individuals.
Professor McGilvray

- **107-501B METAPHYSICS, DIALECTICS, LOGIC AND EPISTEMOLOGY.** (3 credits).
- **107-502A METAPHYSICS I.** (3 credits).
- **107-503B METAPHYSICS II.** (3 credits).
- **107-504A PROBLEMS IN SEMANTICS I.** (3 credits).
- **107-505B PROBLEMS IN SEMANTICS II.**
- **107-510B ADVANCED LOGIC.** (3 credits).
- **107-511D MEDIEVAL LOGIC AND GRAMMAR.** (6 credits).
- **107-520A, 107-521B SEMINAR IN HISTORY AND PHILOSOPHY OF SCIENCE.**
- **107-522A, 107-523B FORMAL METHODS IN PHILOSOPHY AND SOCIAL SCIENCE I & II.**

- **107-526A SCIENCE AND PHILOSOPHY IN THE 17th CENTURY I.** (3 credits). The Philosophy of Montaigne.

- **107-527B SCIENCE AND PHILOSOPHY IN THE 17th CENTURY II.** (3 credits).

107-528A PHILOSOPHY OF PHYSICS I. (3 credits). *Topic for 1982-83:* The philosophical presuppositions of physics and some of the philosophical problems posed by contemporary physics. Topics include: operational definitions, correspondence rules, the structure of theories, the empirical and conceptual tests of theories, and special problems in the foundations of relativistic physics and quantum mechanics.
Professor Bunge

- **107-529B PHILOSOPHY OF PHYSICS II.** (3 credits).
- **107-530A MORAL PHILOSOPHY.** (3 credits).
- **107-532A SEMINAR IN PHILOSOPHY OF RELIGION I.** (3 credits).
- **107-533B SEMINAR IN PHILOSOPHY OF RELIGION II.** (3 credits).
- **107-538D SEMINAR IN THE HISTORY OF ETHICS I.** (3 credits).

107-539B SEMINAR IN THE HISTORY OF ETHICS II. (3 credits). *Topic for 1982-83:* The natural law tradition.
Professor Trentman

- **107-548A LEGAL AND MORAL PHILOSOPHY OF THE JEWISH TRADITION I.** (3 credits).
- **107-549B LEGAL AND MORAL PHILOSOPHY OF THE JEWISH TRADITION II.** (3 credits).

107-550A SEMINAR IN ANCIENT PLHILOSOPHY. (3 credits). *Topic for 1982-83:* Scepticism. Primary emphasis on the writings of Sextus Empiricus and modern commentators.
Professor Bracken

- **107-551B SEMINAR IN ANCIENT PHILOSOPHY.** (3 credits).
- **107-552D THEMES IN THE HISTORY OF JEWISH PHILOSOPHY.** (3 credits).
- **107-560A SEMINAR IN 17TH AND 18TH CENTURY PHILOSOPHY.** (3 credits).

107-561B SEMINAR IN 17TH AND 18TH CENTURY PHILOSOPHY. (3 credits). *Topic for 1982-83:* Descartes & Malebranche.
Professor Bracken

- **107-562D SEMINAR IN THE HISTORY OF PHILOSOPHY.** (6 credits).

107-564A SEMINAR IN KANT I. (3 credits; prerequisite: one course in philosophy). *Topic for 1982-83:* Kant's Theoretical Philosophy.
Professor DiGiovanni

- **107-565B SEMINAR IN KANT II.** (3 credits).

107-566B SEMINAR IN HEGEL I. (3 credits). *Topic for 1982-83:* The Phenomenology of Hegel.
Professor DiGiovanni

- **107-567B SEMINAR IN HEGEL II.** (3 credits).
- **107-568A SEMINAR IN KIERKEGAARD I.** (3 credits).

107-569A SEMINAR IN KIERKEGAARD II. (3 credits). *Topic for 1982-83:* Readings in Kierkegaard. (restricted to Philosophy Honours and Major students; by instructor's permission only).
Professor McKinnon

- **107-570A, RECENT AND CONTEMPORARY PHILOSOPHY.** (3 credits).
- **107-571B RECENT AND CONTEMPORARY PHILOSOPHY.** (3 credits).
- **107-580A SEMINAR IN PROBLEMS OF PHILOSOPHY.** (3 credits).
- **107-581B SEMINAR IN PROBLEMS OF PHILOSOPHY.** (3 credits).

107-588A SEMINAR IN SYSTEMATIC PHILOSOPHY. (3 credits).

107-589B SEMINAR IN SYSTEMATIC PHILOSOPHY. (3 credits).

107-590A SEMINAR IN PHILOSOPHY. (3 credits). *Topic for 1982-83.* A study of a group of classical philosophical problems in modern dress, including the nature of time and the problem of time flow, possibility and possible worlds, interdeterminism, fate, causation and counterfactual conditionals, individuals and proper names, God's omniscience and freewill.
Professor McCall

- **107-591B (594B) SEMINAR IN PHILOSOPHY.** (3 credits).
- **135-358A TOPICS IN JEWISH PHILOSOPHY I.** (3 credits).
- **135-359B TOPICS IN JEWISH PHILOSOPHY II.** (3 credits).

PHYSICS (198)

For Physics courses for Arts students, see "Science for Arts students".

POLITICAL SCIENCE (160)

Professors - MICHAEL BRECHER; THOMAS BRUNEAU; J.R. MALLORY; BALDEV RAJ NAYAR; *(on leave 1982-83);* CHARLES TAYLOR *(on leave 1982-83);* DALE THOMSON
Associate Professors - BARBARA HASKEL *(on leave 1982-83);* FRANK A. KUNZ *(Chairman);* DANIEL LATOUCHE: PAUL C. NOBLE:

SAMUEL J. NOUMOFF; FILIPPO SABETTI; RICHARD SCHULTZ; JOHN SHINGLER: JANICE STEIN; BLEMA S. STEINBERG; JAMES TULLY; HAROLD M. WALLER

Assistant Professors - JEROME BLACK; STEPHEN BORNSTEIN; JOAN DEBARDELEBEN

Room 434, Stephen Leacock Building, 855 Sherbrooke St. West, Montreal, PQ, H3A 2T7, Telephone: 392-5239.

Students wishing to Honour or Major in Political Science MUST consult with a Departmental Adviser prior to registration EACH year in order to devise a suitable program. Students who are registering with the Department for the first time must bring transcripts of their previous CEGEP or university level work.

All students wishing to enter the Major (and possibly, in U-2, the Honours) Program in Political Science are required to attend one of the following Orientation Meetings with faculty members: either Tuesday August 31, at 9:00 a.m. in Leacock 219 or Tuesday, September 7, at 9:00 a.m. in Leacock 219, as well as to obtain a copy of each of the following from the Political Science Department (Leacock 434): "Programs in Political Science" and "Description of Courses".

MAJOR PROGRAM

The Major program in Political Science consists of 54 credits of which at least 42 credits must be in Political Science. Students are required to take 12 credits of these 54 credits outside the Department in "cognate" subjects closely related to their Political Science programs. (see departmental list of approved courses). 6 credits of these courses must be upper level (above 200).

In the U1 year, a major student must take a total of twelve credits in Political Science, covering at least two of the four main fields of concentration offered by the Department (Comparative Government and Politics, Canadian and Québec Government and Politics, International Politics, and Political Theory). Students should not register for more than four one-term (3 credits) courses in their first year. The course requirements in the various fields are outlined below.

Overall, while some concentration in one area of the discipline is considered beneficial, excessive specialization is discouraged. Students are therefore required to take at least one third of their Political Science program (i.e. at least five half courses) outside their area of concentration.

For a more detailed description consult the departmental information sheet entitled *Programs in Political Science.*

OTHER MAJOR PROGRAMS

A combined *major* program is available with the Departments of *Economics and History* respectively. The requirements for this degree are 5 full courses in Political Science and 5 full courses in the other Departments. The same principles concerning the distribution of courses that were outlined above for the single major apply here too, both at the U-1 level and overall.

In addition, students can follow double majors programs involving Political Science and some other related discipline. These differ from the major with Economics or History in that they require the student to complete all the requirements for the single major in both Departments (i.e. at least 6 or 7 courses in each discipline). In both "combined" major and "double" major programs the requirement for 12 "cognate" credits in waived.

Further information may be obtained from the Major Adviser, 392-5239.

HONOURS PROGRAM

The Honours program in Political Science consists of 60 credits of which 48 must be in Political Science. The remaining 12 credits must be in related social studies disciplines.

Students wishing to take Honours Political Science will be admitted to the program in their U-2 year. In their U-1 year, they should register as Major students and take 15-18 credits in Political Science spread over at least three of the four main fields offered by the Department (Comparative Government and Politics, Canadian and Québec Government and Politics, International Politics, Political Theory). The course requirements in the various fields are outlined below.

Students in the Honours Political Science program are encouraged to concentrate in one or two of the major fields offered by the Department. However, while concentration is considered beneficial, excessive specialization is discouraged. Students, therefore, will normally not be permitted to take more than half their Political Science credits in any one field. Honours students are required to take one quarter of their Political Science credits (12 credits) at the 400 level or higher, including at least one Honours Seminar or graduate course. (For the list of 600 level courses, please consult the departmental course description booklet which is available in the Department office.) Further information may be obtained from Professor Noble (Honours Chairman, U3 students) and Professor Black (Honours adviser, U1 and U2 students).

JOINT HONOURS

Joint Honours Programs are currently available in the following areas:

Political Science and Economics
History
Philosophy
Sociology
Anthropology
Middle East Studies

Students who are interested in pursuing a Joint Honours program in some other area (e.g. Political Science and East Asian Studies, Political Science and Psychology, Political Science and Geography, or Political Science and one of the modern languages) should get in touch with the Honours Adviser to see if a suitable program can be devised. Such programs will then be submitted for approval to the Faculty of Arts.

The requirements for Joint Honours degrees are 36 credits in Political Science and 36 credits in the other Honours subject. Students wishing to follow a Joint Honours program will be admitted in their U-1 year. Joint Honours students normally take 12 credits in Political Science, 12 credits in the other Honours subject and 6 credits of options in each year of their program.

In the U-1 year, the 12 credits in Political Science should cover at least two of the four main fields offered by the Department. While some concentration is encouraged, students will normally not be permitted to take more than half their Political Science credits in any one field. Joint Honours students, like single Honours students, are required to take one quarter of their Political Science credits (i.e., 9 credits) at the 400 level or higher, including at least one Honours Seminar or graduate course.

Standards

To enter Honours or remain in Honours, students must obtain a cumulative average in the upper half of the B category (i.e. 72% plus) in their Political Science courses and an overall GPA of at least 2.8. In addition, Honours students must also maintain a satisfactory pattern of performance in their Political Science courses. Specifically, to remain in Honours, students should not receive grades below 70% in more than one-quarter of their Political Science credits. To be awarded Honours at graduation, students must be registered in the Honours program in their U-3 year. At graduation, students' Honours standing will be determined by their overall record in the Honours program.

Further information may be obtained from the Honours Adviser, Professor Paul Noble, 392-5237.

BASIC POLITICAL SCIENCE FIELDS

Students entering an honours or major program may wish to concentrate to some extent in one or more areas of Political Science. If so, they should take note of the basic course requirements in these fields.

1) COMPARATIVE GOVERNMENT AND POLITICS

Students wishing to concentrate in this field are normally required to take 160-211D (Comparative Government and Politics) and are strongly urged to take 160-227B (Political Change in the Third World).

2) CANADIAN AND QUÉBEC GOVERNMENT AND POLITICS

Students wishing to concentrate in this field are required to take 160-221D (Government of Canada) and are strongly urged to take 157-226A (Introduction à la vie politique québécoise).

3) INTERNATIONAL POLITICS

Students wishing to concentrate in this field are required to take 160-245A (The International System) or 160-244B (International Politics). While only required to take one of these courses, students should note that it would be helpful if they took both, since they concentrate on different problem areas in the study of international politics.

4) POLITICAL THEORY

Students wishing to concentrate in this field are normally required to take 160-231D (Political Theory).

Course Descriptions

This announcement is prepared early in the year and so is likely to need modification by the time the academic year begins. A mimeographed supplement is available in the department office and should be consulted.

Students are expected to take the 200 level course in each field (see above) prior to taking the 300 or 400 level courses in that field.

- *Denotes not offered 1982-83.*

160-211D COMPARATIVE GOVERNMENT AND POLITICS. (6 credits). This course will first examine in detail the major features and processes of the political systems of Britain, France and Germany. The course will then move to focus cross-nationally on the themes of conflict and consensus in these polities. Reference will also be made to Belgium, Canada and the U.S.A.
Professor Black

160-212A TECHNIQUES OF EMPIRICAL RESEARCH. (3 credits). An introduction to empirical political research. Among the topics considered are the formulation of research problems, the selection of samples, interviewing, and questionnaire con-

struction, and the analysis and interpretation of data.
Professor Waller

160-221D GOVERNMENT OF CANADA. (6 credits). An examination of the operation of parliamentary institutions in a federal state, and of the operation of federalism in Canada.
Professor Mallory

160-227B POLITICAL CHANGE IN THE THIRD WORLD: INDEPENDENCE AND NATION BUILDING. (3 credits). An introductory course on the politics of the Third World. In this course the processes of achieving independence and building nations will be analyzed, a number of theories on revolution and modernization will be reviewed and selected cases on the formation of new regimes will be analyzed. These cases will be drawn from Asia, North Africa, and Latin America. There will be two hours of lectures per week and one hour in a discussion group.
Professor Bruneau

160-231D POLITICAL THEORY. (6 credits. This course is normally a prerequisite for all upper level courses in political philosophy). The aim of the c ourse is to introduce the student to the field of political theory. One professor presents a series of lectures on a basic concept or theme in political theory. Other professors reply to his presentation and then students are invited to address the lectures and replies. This is followed by a series of lectures by another professor and replies by professors and by students. This format continues through the two terms and a select number of themes are covered.
Professor Shingler and Tully

160-244B INTRODUCTION TO INTERNATIONAL POLITICS. (3 credits). An examination of the impact of biological, psychological, economic, political, and military factors on decisions which lead to war and peace. The management of conflict prior to World War I and in the period preceding World War II will be compared systematically to such conflicts in the post-war period as Cuba and Vietnam.
Professor Stein

160-245A THE INTERNATIONAL SYSTEM. (3 credits). This course will examine the evolution of the modern international system, comparing the traditional European multipolar system, the post World War II global system and the emerging global system of the 1980's. The focus will be primarily on the capabilities, policies and relationships of the major powers.
Professor Noble

- **160-247B FOREIGN POLICY IN THE THIRD WORLD.** (3 credits). This course will examine domestic and external sources of conflict within the Third World. It is experimental in form: students will work at their own pace through the use of individually designed modules. Students are requested to consult the special course description which is available in Leacock 434.

160-300D COMPARATIVE REVOLUTION. (6 credits. Prerequisite: 227B or permission of the instructor; not open to students who have taken Political Science 160-300L). A course dealing with the post World War II revolutionary process in the third world. Special attention will be devoted to the nature of the revolutionary process in the struggle for national liberation - examining cases where this approach both succeeded and failed. Examples will be drawn in depth from Asia, Africa and Latin America. Students will be required to do a thorough case study.
Professor Noumoff

- **160-312B PUBLIC OPINION AND VOTING BEHAVIOUR.** (3 credits). A detailed consideration of various models of voting behaviour and public opinion with a heavy emphasis on explanations of why citizens vote (turnout) and why they vote the way they do (direction). The models are critically examined from a logical and empirical standpoint in the context of survey data drawn from the American, British and Canadian cases. To aid in the reading and understanding of the empirically oriented material, the first series of lectures will briefly cover in an informal way the topics of survey research, sampling and elementary data analysis. No empirical or quantitative skills are assumed.
Professor Black

160-318A LOCAL GOVERNMENT IN COMPARATIVE PERSPECTIVE. (3 credits). An examination of the organization and conduct of local government in Canada, the United States, selected European countries and Israel. Special attention will be paid to the theories of local government, the criteria for comparative analysis, the provision of public goods and bads, urban political patterns and the constitution of new institutional arrangements to deal with "the urban crisis" in North America.
Professor Sabetti

- **160-319D POLITICS OF LATIN AMERICA.** (6 credits. Prerequisite: any course in Latin America or Comparative Politics). This course will deal with the dynamics of political change in Latin America today.
Professor Bruneau

160-320A THE CANADIAN POLITICAL PROCESS. (3 credits. Prerequisite: At least one other course in Canadian or Comparative Government and Politics). A critical analysis of different aspects of the Canadian Political Process. This course will examine the socioeconomic and political environment, political ideology and political culture, the electoral system, the party system, the ideology, the structure and behaviour of parties, pressure groups and elites.
Professor Black

160-321B ISSUES IN CANADIAN PUBLIC POLICY. (3 credits. Prerequisite: at least one other course in Canadian or Comparative Politics). An examination of the Canadian political process through an analysis of critical policy issues in regional and community development, natural resources and national interests, and institutional reforms in public service delivery systems. Consideration will be given to different diagnostic and prescriptive interpretations of public choices in a federal-parliamentary regime.
Professor Sabetti

- **160-322B MODERNIZATION AND POLITICS IN SOUTH ASIA.** (3 credits). Modernization tasks, traditional and colonial legacy, social and political framework, reform strategies and system performance, competing elites and ideologies, revolutionary movements and their prospects.
Professor Nayar

160-323B POLITICS AND GOVERNMENT IN EAST ASIA (CHINA AND JAPAN.) (3 credits). A survey of traditional and modern political society in China and Japan. Special emphasis is placed on governmental policy and institutions in relation to ideology in the Peoples' Republic of China and post-1945 Japan.
Professor Noumoff

160-324D POLITICS AND GOVERNMENT IN AFRICA. (6 credits). The government and politics of African states south of the Sahara with reference to traditional political systems, colonial policies, nationalism, and the problem of nation building.
Professor Kunz

160-325D GOVERNMENT AND POLITICS OF THE UNITED STATES. (6 credits). A survey of the American political system, with emphasis on the constitutional and philosophical setting, the institutions and their interactions, the political process, public policy issues, and political change.
Professor Waller

- **160-327A THE PRINCIPLES OF PUBLIC ADMINISTRATION.** (3 credits). An outline of the basic concepts employed in public administration will include organizational structure and behaviour, the concept of management and personnel development, the decision-making processes and the problems of change and innovation. The subject matter will be general although references will be made to Canadian examples.

160-328D EUROPEAN GOVERNMENT AND POLITICS. (6 credits; Prerequisite: 160-211D or permission of instructor). Western Europe as a case of political development. Divergent twentieth-century political outcomes (fascism, communism, liberal democracy) are examined as the products of long-term historical processes of nation-building and socio-economic modernization. Alternative approaches to the explanation of political development will be studied and their applicability to Europe evaluated.
Professor Bornstein

160-329A POLITICS AND GOVERNMENT OF THE SOVIET UNION. (3 credits; Prerequisite: some prior related course, i.e. comparative politics, Soviet history, or Marxist theory; or consent of instructor). The first part of the course will set the historical background for contemporary Soviet politics: Marxism-Leninism; conflicts over economic development; Stalinism; and evolution of the party. In the post-Stalinist period state and party roles, political socialization; nationality conflicts; economic problems; social stratification; and group influence will be examined.
Professor DeBardeleben

160-331B EAST EUROPEAN COMMUNIST SYSTEMS. (3 credits). A survey of the historical development and current structure of East European states, their relationship to their societies, with special emphasis on diversity and its sources. Topics include: historical backgrounds, modes of establishment of the Communist regimes, responses to de-Stalinization, nature of the parties and elites, relations with the Soviet Union, nationality issues, attempts at economic reform.
Professor DeBardeleben

160-333A HISTORY OF POLITICAL AND SOCIAL THEORY (I). (3 credits. Recommended: 160-231D). This course will explore the major themes and writers in the political theory of classical antiquity. The political ideas of Thucydides, Plato, Aristotle, and the Hellenistic philosophers will be explored through the significant texts of this period.
Professor Shingler

160-334B HISTORY OF POLITICAL AND SOCIAL THEORY (II). (3 credits. Prerequisite: 160-231D). The course will consist of lectures and discussions on medieval and renaissance political philosophy, from Saint Augustine to Saint Thomas More. Scholastic and neo-scholastic political thought, natural law and natural rights, as well as civic and northern humanism, republicanism and liberty, will be discussed. Twentieth century work on similar concepts also will be used. (160-333A should be taken before this course and 160-433A after it).
Professor Shingler

- **160-337A CANADIAN PUBLIC ADMINISTRATION.** (3 credits; Prerequisite: at least one other course in Canadian government or politics). An analysis of the organization and practice of public administration at the federal, provincial and local level in Canada. Particular attention will be given to contrasting theories and techniques of public administration and policy, the organization of field offices for the delivery of essential public services, governments as employers, and institu-

tional and policy changes to resolve the crisis inherent in "the paradoxical view of bureaucracy".
Professor Sabetti

160-340A POLITICS AND GOVERNMENT IN THE ARAB WORLD. (3 credits; 160-227B would be helpful but is not required). An examination of the societies, political forces and regimes of selected countries of the Eastern Arab world (Egypt, Syria, Lebanon, Jordan, Saudi Arabia).
Professor Noble

160-341B FOREIGN POLICY IN THE ARAB WORLD. (3 credits; Prerequisite: 160-340A or consent of the instructor). An examination of the foreign policies and behavior of the Arab states in three areas: inter-Arab relations, Arab-Israeli relations, Arab-Great Power relations. The course will also include a simulation dealing with current foreign policy problems in the Middle East.
Professor Noble

160-342B CANADIAN FOREIGN POLICY (3 credits. Prerequisite: 160-221D). An examination of the development and articulation of Canadian foreign policy. Theoretical approaches. The environmental setting. Historical perspectives. Trans-Atlantic linkages. The American connection. The Common Market. The United Nations. Military security. Developing relations with Asia, Africa, Latin America. Canada in global society.
Professor Thomson

160-343B CONTEMPORARY INTERNATIONAL SYSTEMS: LATIN AMERICA. (3 credits; Prerequisite 160-319B or 160-319D or consent of instructor). An examination of the evolution of the inter-American system since the turn of the century. The role of the United States in this system will receive considerable attention as will the increasing power of countries such as Brazil, Mexico, and Venezuela. Canada's involvement in the system will be discussed particularly with regard to investment and participation in regional organizations.
Professor Bruneau

- **160-344B CONTEMPORARY INTERNATIONAL SYSTEMS: EUROPE.** (3 credits; Prerequisite: 160-244A or 160-245B or consent of instructor. 160-346A would be a helpful preparation for this course). An examination of the evolution of the European system since 1945.

- **160-345A INTERNATIONAL ORGANIZATION.** (3 credits; Prerequisite: 160-244A or 160-245B). This course will focus on the United Nations – its performance and problems. Special emphasis will be placed on two of its roles: as an agent for conflict management and as a source of pressure to redistribute values, wealth and skills.
Professor Steinberg

160-346A THE FOREIGN POLICIES OF THE SUPER POWERS. (3 credits; Prerequisite: 160-244A or 160-245B). An analysis of American and Soviet foreign policies within the context of the major conceptual approaches to foreign policy behaviour. Special emphasis will be placed on the examination of similar patterns of behaviour, i.e. cold war politics, the arms race, hegemonic behaviour, etc., with a view to uncovering the major explanatory variables and comparing them.
Professor Steinberg

160-347A ISRAEL, THE POWERS AND THE MIDDLE EAST CONFLICT. (3 credits; Prerequisite: 160-244A or 160-341B). This course has two major strands, Israel's foreign policy since 1948 and Great Power roles in the Arab-Israel conflict. The first part will analyze the ideological roots of the conflict, party programs and interest group pressures, and Israel's decision-making process. Changing policies of the Powers will then be explored, from the struggle for Israel's independence to the prolonged peace process of the 1970's.
Professor Brecher

- **160-349B CONTEMPORARY INTERNATIONAL SYSTEMS AND FOREIGN POLICY: ASIA.** (3 credits). A study of the foreign policies of the major Asian powers – China, Japan, India and Pakistan. Emphasis is on student research in the context of a common framework for the study of foreign policy. Focus is on foreign policy goals and behaviour and their relationship to economic and military capabilities, societal characteristics and governmental features.
Professor Nayar

160-350A DETERRENCE AND ARMS CONTROL: WAR AVOIDANCE AND WAR LIMITATION. (3 credits). Contemporary concepts of deterrence and arms control. Primary emphasis will be placed on the development of the concept of conventional deterrence in the last two decades. In 1982-83, cases of war avoidance and war limitation will be drawn from the third world, with particular reference to the Middle East. In the workshops which supplement the lectures, students will prepare papers on cases of conventional deterrence or arms control.
Professor Stein

160-363A RADICAL POLITICAL THOUGHT (I). (3 credits). This course will focus on the origins and meaning of radicalism in the 19th century and trace its evolution in this period. A study of the impact of the French Revolution and the dislocations wrought by industrialization will provide background for a close examination of Marx and his Hegelian roots. A close look at anarchist theories and critiques will close the term's work.

160-364B RADICAL POLITICAL THOUGHT (II). (3 credits). The transformation of Marxist and anarchist theory in response to new theoretical and practical problems in the 20th century is the major focus. Such thinkers as Lukacs, Gramsci, Marcuse and Habermas will be studied in depth. The

rise of "new left" radicalism and its significance in the era of technology will be probed.

160-365B DEMOCRATIC THEORY. (3 credits. Prerequisite: 160-231D). A series of lectures and seminars on democratic theory with special reference to participation. Oral presentations, discussion and essays required.
Professor Tully

- **160-368A THE COMPARATIVE POLITICS OF WELFARE.** (3 credits; Prerequisites: At least one course above 200 level in European or North American politics. Elementary economics helpful and recommended). Different philosophies as well as historical and institutional experiences affect policies designed to deal with such common problems of industrial societies as unemployment, security in old age (pension policies, care of the aged), and health care. Attention to philosophical analysis, "problem-setting", the political economy of welfare policies, dual political-technical strategies of political leaders, and currently discussed policy dilemmas. (Not open to students who have taken 160-370A).
Professor Haskel

160-415A POLITICAL PARTIES. (3 credits; Prerequisite: One other course in Comparative Government). A comparative study of modern parties and party systems. Development of parties and party systems. Classification and analytical approaches. Ideologies. Party organizations and strategies. Electoral behaviour. Party reforms and democracy.
Professor Thomson

160-419A COMPARATIVE COMMUNISM. (3 credits. Prerequisite: a previous History or Political Science course dealing with some communist system or permission of instructor). Similarities and differences between selected "communist" political systems. Themes considered will include conditions propitious for successful revolutions by Marxist-Lenist parties; strategies of economic development; the import of national culture on the application of Marxism-Leninism; attempts at cultural transformation; class structure; and directions of change in the present period.
Professor DeBardeleben

160-420B POLITICS AND COMMUNICATIONS. (3 credits). The role of communications on the political process in Canada. Examination of communication theories relevant to study of politics and their application in selected field studies. Opinion formation and decision-making will be the principal foci of attention.
Professor Thomson

160-421B HONOURS SEMINAR: CANADIAN POLITICS AND GOVERNMENT. (3 credits; Prerequisites: 160-221D and either 160-320A or 160-321B, or permission of the instructor). This seminar will enable advanced students to deal with selected problems of Canadian socio-economic and political structures; political culture; constitutional development, and government structure. In 1982-83 the topic is to be announced.
Professor Black

160-422A HONOURS SEMINAR: THE POLITICS OF DEVELOPING AREAS. (3 credits; Open to honours students and to other advanced undergraduates with good records with the permission of the instructor; Prerequisite: At least one course in the politics of developing areas). Selected topics in the fields of political development and the politics of developing areas. Students will be expected to undertake a research project.

- **160-423A POLITICS IN ITALY.** (3 credits; Prerequisite: permission of instructor and some prior related course, i.e., European history, political theory, comparative politics or Italian literature). Analysis of Italian politics, both historical and contemporary, through social science and imaginative literature. Search for regularities in Italian political life, for what makes Italian political development unique and makes it resemble the political development of other countries. Special attention to the problem of competing interpretations of Italian politics. This course is offered in alternate years.
Professor Sabetti

160-424B HONOURS SEMINAR: THE POLITICS OF DEVELOPED AREAS. (3 credits. Open to honours students and to other undergraduates with permission. Prerequisite: 160-211D or 160-328D or 160-329A or permission of instructor). This seminar deals with various aspects of the politics of developed areas. In 1982-83 the seminar will examine theoretical approaches, empirical findings, and methodological problems related to comparisons of Soviet-type and Western political systems. Theories examined include industrial society, Marxist, systems analysis, and others. Specific focus on topics such as political participation, class structure, political elites, nationalities, public policy, and interest groups.
Professor DeBardeleben

160-425A SELECTED TOPICS IN AMERICAN POLITICS. (3 credits; Prerequisite: 160-325D). This course will involve a detailed analysis of a limited area of American politics and government. *This course is offered in alternate years.*
Professor Waller

160-428B POLITICS IN FRANCE. (3 credits; Prerequisite: Permission of instructor and some prior related course required, i.e. European History, Political Theory, and/or Comparative Politics). The distinctive characteristics of French politics in the comparative perspective of Western Europe and North America.
Professor Bornstein

- **160-430A THE POLITICS OF SCANDINAVIA.** (3

credits; Prerequisite: 160-211D or its equivalent or the consent of the instructor; suggested: other European history or politics courses). The historical roots and political consequences of Scandinavian development. Political ideas and structures and their social and political infrastructures. Policy problems and solutions: growth and social justice: expanding and dividing the pie. Scandinavian countries as models. Emphasis on different Scandinavian countries and/or different policy areas in different years.
Professor Haskel

160-433A HISTORY OF POLITICAL AND SOCIAL THEORY (III). (3 credits; Prerequisite: 160-231D). Lectures and discussions on early modern political philosophy, from Luther to Rousseau and Burke. Resistance theories of the sixteenth century, Hobbes and Locke, the Enlightenment and the French Revolution will be discussed. Twentieth century work on concepts developed in this period, such as rights, revolution, legitimacy, democracy, authority and liberty, also will be used. (160-334B should be taken before this course).
Professor Tully

160-434B HISTORY OF POLITICAL AND SOCIAL THEORY (IV). (3 credits. Recommended: 160-231D). A consideration of selected writers and themes of late 19th and 20th century political theory. Writers include Hegel, Clausewitz, Marx, Mill, Nietzsche, Lenin, Rowis, Foucault, and Habermas. The rise of industrial society, scientism, the romantic revolt, revolutionary movements, socialism and liberal-democracy will form the backdrop for the course.
Professor Tully

- **160-441A INTERNATIONAL POLITICS AMONG ADVANCED INDUSTRIAL STATES.** (3 credits). Changes in postwar international setting have politicized economic issues. What have we learned from the theories of economic integration compared to the historical experience? Increasing interdependence among advanced industrial states has affected domestic and foreign policymaking. What are the domestic requirements for interstate agreements? Canada-U.S. relations: the realist and the complex interdependence perspectives will be compared.
Professor Haskel

160-453A THE HISTORY OF BRITISH CONSTITUTIONAL THOUGHT. (3 credits; Prerequisite: 160-231D). A survey of the historical development of the British Constitution and the interpretation attendant upon its growth. Documents and writing to be studied include the Magna Carta, the Petition of Right, and the Bill of Rights, and the commentaries of Fortescue, Bracton, Coke, Selden, Blackstone, Burke, Bagehot and Dicey.
Professor Shingler

160-454B THE HISTORY OF BRITISH POLITICAL THOUGHT. (3 credits). An historical and textual examination of selected writers and themes in British social and political thought drawn from: Shaftesbury, Swift, Pope, Burke, More, Bacon, Carlyle, Arnold and Orwell.
Professor Shingler

160-460B POLITICAL IDEOLOGIES. (3 credits). A study of the origins, content and functions of ideologies, and their relationship to political action and institutions, through a comparative survey of some of the major political ideologies in the modern world.
Professor Kunz

160-461B HONOURS SEMINAR: POLITICAL THEORY. (3 credits; Open to honours students and to other advanced undergraduates with good records with the permission of the instructor). A topic in political philosophy such as democracy, liberty, property or nationalism, or a political plhilosopher, is studied in detail. The aim of the course is to enable students to research a topic in depth, to present their papers to the seminar, and to engage in and profit from discussion and debate.
Professor Tully

- **160-464B THE COMPARATIVE POLITICS OF ECONOMIC POLICY.** (3 credits; Prerequisites: At least one course above 200 level in European or North American politics. Elementary economics is needed). Political traditions and choices in and implementation of economic policies. From what do these differences derive? Differences in the way political systems deal with such issues as public sector growth, capital formation, the persistence of traditional sectors, inflation and stagflation. Effects of the functional and electoral tiers on the economy and on the political system. (Not open to students who have taken 160-370A).
Professor Haskel

- **160-465B THE POLITICS OF PLANNING AND POLICY MAKING.** (3 credits). This course will take up: (1) cultural, ideological, political and organizational influences on policy-making; (2) problems in the logic of policy-making. Students will focus on a problem in policy-making in such areas as science, regional development, language, economics, management, etc.
Professor Haskel

160-466B PUBLIC POLICY ANALYSIS. (3 credits). The course will first present the principal intellectual traditions concerned with the study of public policy. These traditions will then be applied to examine the policy process in North America and Western Europe. Attention will be paid to the criteria for evaluation, between constitutional choice and governmental process, the role of political influence in policy making and implementation and the problem of change in post-

industrial societies.
Professor Sabetti

160-469A THE POLITICS OF REGULATION. (3 credits). This seminar will examine the regulatory process, with the primary emphasis on Canada, from a number of perspectives including the origins of government regulation, alternative regulatory mechanisms, the relationships between regulatory agencies and departments, Cabinet, Parliament, the courts and the public and the linkages between the regulatory process and the federal system.
Professor Schultz

160-471A LIBERALIZATION OF AUTHORITARIAN REGIMES. (3 credits). There are a number of commentators and analysts who argue that there is a clear trend toward the liberalization of authoritarian regimes which are so prevalent in the Third World. There are others who deny that such a trend is possible. Material from Political Science and the broader field of Political Sociology.
Professor Bruneau

160-475B HONOURS SEMINAR: INTERNATIONAL POLITICS. (3 credits; Open to honours students and to other advanced undergraduates with good records with the permission of the instructor). A research oriented seminar dealing with selected topics in the field of International Politics and Foreign Policy. Students are advised to consult the departmental list of courses for a description of the particular problem to be treated in 1982-83.
Professor Stein

160-490A/160-491B INDEPENDENT READING AND RESEARCH. (3 credits each). Final year honours students wishing to pursue a specialized interest will be allowed to undertake a program of independent reading and/or research in that area under the supervision of a member of staff. Such programs may be undertaken by students either individualy or in small groups. It is the responsibility of the student(s) to obtain the instructor's consent prior to registration.

160-494A HONOURS SEMINAR: INTERNATIONAL POLITICS. (3 credits; Open to honours students and to other advanced undergraduates with good records with the permission of the instructor). A seminar for advanced undergraduates in international relations in basic principles of research design. Students will be introduced to the concepts of research design and research methods. They will prepare a research report, using primary materials, on a problem in international relations. Students will also assist in the teaching of the introductory course, so that they will both teach and do research in international relations.
Professor Stein

160-499B HONOURS ESSAY. (3 credits. Open to honours students only). Regular contact between students and professors, the writing of a well researched essay and its oral defense. The essay should be of journal article length and form, not exceeding fifty pages in length. It should demonstrate some experience with primary research material, the ability to organize and to present a set of arguments in a logical and developed manner, the ability to employ various theoretical perspectives and analytical techniques as well as to assess secondary material and to synthesize various kinds of knowledge.

The following courses are considered as Political Science courses for the purpose of a majors or honours degree in Political Science. Descriptions of the courses will be found under the Centre d'Études Canadiennes-Françaises:

157-226A	Introduction à la vie politique québécoise
157-316A	Québec et l'Amérique du Nord
157-336A	Québec et le Canada
157-355B	Les idées politiques au Québec avant 1960
157-356B	Les idées politiques au Québec depuis 1960
157-370A	La révolution tranquille au Québec depuis 1960
157-426B	Partis politiques et comportements électoraux au Québec
157-446B	Prise de décision et politiques publiques au Québec
157-456B	L'analyse des politiques sociales au Québec

PSYCHOLOGY (204)

Room W8/1, Stewart Biological Building, 1205 Avenue Docteur Penfield, Montreal, PQ, H3A 1B1. Telephone: 392-4708.

Psychology is the scientific study of mind and behaviour. It is both a social and a biological science.

As a social science, psychology studies social interactions. As a biological science, it regards humans as the product of evolution and so studies them in biological perspective, comparing and contrasting human behaviour with that of other species.

The data of psychology are collected within the psychological laboratory by the use of experimental methods in the study of behaviour, and outside the laboratory by systematic observation of the behaviour of humans. The aim is to formulate general principles of perception, learning, motivation, and thinking that are relevant to different aspects of individual and social life. Experimentation, laboratory techniques, observational procedures, measurement and statistical methods are important tools of the psychologist in the study of behaviour.

Psychology has many interdisciplinary aspects. The study of many psychological problems involves knowledge drawn from other disciplines such as biology, physiology, linguistics, sociology, philosophy, and mathematics. For this reason a student with varied interests can frequently find a place for these interests in psychology.

Psychology is a young science so that explanations of the processes underlying observed phenomena are often theoretical and speculative. The major objectives of psychological study are to reduce the discrepancy between theory and fact and to provide better answers about why man thinks and be haves as he does.

Although a number of undergraduate courses in psychology have applied implications, applied training is in no way the purpose of the undergraduate curriculum. The purpose of that curriculum is to introduce the student to an understanding of the basic core of psychological knowledge, theory, and method, regardless of questions of practical application.

The B.A. or B.Sc. with a Major or Honours degree in psychology is not a professional qualification. It does not qualify the individual to carry on professional work in psychology. In the Province of Québec the minimum requirement for membership in the Corporation of Psychologists of the Province of Québec, the professional association governing the work of psychologists in the Province, is an M.A. or M.Sc. degree, or other equivalent degree.

All students planning to practise in the Province of Québec will be examined on their proficiency in French before being admitted to the professional association.

Although requirements for admission to graduate studies in psychology vary from one university to another, both the Honours and Major degrees in psychology may qualify the student for admission to many graduate schools, provided of course that sufficiently high marks are obtained.

The essential difference between the Honours and the Major program is that higher standards are required of Honours students. Honours students also have an opportunity to work in small groups closely with staff members.

PSYCHOLOGY INFORMATION MEETINGS FOR NEW STUDENTS

All new students entering the Psychology undergraduate program are required to attend an Information Meeting prior to registration. Group meetings are scheduled daily at 9 A.M. from August 30 - September 7, in Room W2/3A, Stewart Biological Sciences Building. At these meetings, the Academic Adviser will explain the general outline and requirements of the Department's program. Incoming students will have an opportunity to ask questions and receive advice on how to plan their courses. After attending one of these meetings, students will meet individually with an adivser in order to fill out their Study Plan form for registration. No appointment is necessary.

Entering students must bring their Letter of Acceptance and a copy of their collegial transcript(s). They will also need the Arts and Science Announcement and a Timetable (available in the Student Affairs Office, Dawson Hall). Students will also find the Psychology Department Handbook helpful. This Handbook contains more detailed descriptions of Psychology courses, as well as providing guidelines for how students might pursue particular areas of interest such as Child Development/Developmental Psychology, Clinical/Abnormal Psychology, Cognitive Science and Cognitive Psychology, Educational Psychology, Psychobiology/Physiological Psychology, Psychology and Philosophy, Psychology of Language/Psycholinguistics, Quantitative Psychology, and Social / Personality Psychology.

The Psychology Department Handbook can be purchased for $2.50 from about the first of July in Room N7/28, Stewart Biological Sciences Building. Out-of-town residents may have a copy mailed to them upon receipt of $2.50. Requests should be mailed to the Department of Psychology Adviser's Office, 1205 Docteur Penfield Avenue, Montreal, PQ., H3A 1B1.

New students may consult the Academic Adviser in Room N7/30 during the summer months. No appointment is necessary.

RETURNING STUDENTS IN PSYCHOLOGY

Returning U2 and U3 students may consult an adviser during the summer months to have their Study Plan form approved. Students who were enrolled in any of the old major options or joint honours programs before the academic year 1980-81 may refer to page 134 for descriptions of these old programs. They must bring with them their Report of Standing, as well as the Arts and Science Calendar and Timetable. No appointment is necessary.

PREREQUISITES:

It is expected that most students who major in psychology will have taken introductory psychology and statistics at the collegial level. In the First year all Major students must take Psychological Statistics (204-305A or B). Those students who have not taken a college level statistics course must also take Psychology 204-204A or B in addition to the courses in their program.

A two-semester course in introductory psychology, such as 204-201D, is a prerequisite for all 300, 400 and 500 level courses in psychology.

MAJOR PROGRAM

The statistics requirement introduces approaches to psychological data: Statistics in Experimental Design (204-305A,B) or Correlational Techniques (204-307B). *One* of these two courses must be taken during the U1 or U2 years for a total of *three credits.*

There are five basic psychology courses: Motivation, (204-300A); Learning (204-301B); Perception (204-302A); Thinking (204-303B); and Laboratory Methods (204-312B). Each is a three-credit course. Four of these must be completed by the end of U2 for a total of *twelve credits.*

Seven one-year course sequences introduce specialized areas of psychological knowledge. Any *three* of these *six-credits sequences* must be completed for a total of *eighteen credits:*
Introduction to Abnormal Psychology 204-337A *and* 337B.
Cognitive Psychology, 204-401A *and* 404B.
Child Development, 204-304D.
History and Systems, 204-304A *and* 400B.
Physiological Psychology, 204-308D.
Personality and Social Psychology 204-330A *and* 333B.
Quantitative Psychology, 204-335A *and* 336B.

An additional *nine credits* of psychology courses must be completed at the 400 or 500 level.

Twelve credits must be completed at the 300 level or higher. These courses must be selected from the Departments of Psychology, Anthropology, Linguistics, Economics, Mathematics, Philosophy, Political Science, or Sociology.

Each major student must complete an additional *eighteen credits* of courses outside the Psychology Department. At least *nine credits* should be at the 300 level or higher. These courses should be selected from any inthe University, subject to regulations of the Faculty of Arts.

Students majoring in Psychology must obtain a minimum grade of C in all 54 credits required by their program. A grade lower than C may be made up by taking another equivalent course (if there is one), by successfully repeating the course, or by successfully writing a supplemental examination (if there is one).

HONOURS PROGRAM

Honours in Psychology prepares students for graduate study, and so emphasizes practice in the research techniques which are used in graduate school and professionally later on. Students are accepted into Honours at the beginning of U2; and the two-year sequence of Honours courses continues through U3. Admission to Honours is selective. There is normally room for 30-35 new Honours students each year. Students with a cumulative grade point average of 2.8 or better are eligible to apply; however, during the past several years it has been possible to accept very few students with averages below 3.5. Once in the Honours program, the student must obtain a GPA of 3.0 in their U2 year in order to continue in the program for U3.

In the U2 year, Honours students will take 204-380D. They are also required to complete three credits from 204-305A/B or 204-307B, plus 12 credits chosen from 204-300A, 204-301B, 204-302A, 204-303B and 204-312B. They will choose *two* of the one year sequences (12 credits). Note that 204-400B is not open to Honours students. In the U3 year, Honours students will take 204-403A, 204-480B and 204-481D in place of the nine credits of psychology courses at the 400 and 500 level required of Major students, and three of the 12 credits required at the 300 level or higher from a selection of other departments. They must complete the same requirements for courses outside the Department of Psychology as are required in the Major Program, according to the Faculty in which they are registered.

Students should note that awarding of the Honours degree will depend on *both* cumulative grade point average and a minimum grade B on the four required courses for Honours students (204-380D, 403A, 480B, 481D). 'First Class Honours' is awarded to students who obtain a minimum cumulative grade point average of 3.5 and a minimum CGPA of 3.5 in the four Honours courses, of which 12 out of 18 credits (2 or 3 courses) received at least an A- grade. 'Honours' is awarded to students with a minimum cumulative grade point average of 3.0 and a minimum CGPA of 3.0 on these four courses. Moreover, the awarding of the Honours degree normally requires completion of 2 full years of study, U2 and U3, in the Psychology Department; exceptionally good students may be admitted for the U3 year only on the basis of their marks and research experience.

Applications can be obtained from the General Office of the Department of Psychology, Room W8/1, Stewart Biological Sciences Building. The applications must be completed and returned to the General Office by September 1, of the year for which admission to Honours is sought. Candidates will be advised of the Department's decision through a notice posted in front of the Undergraduate Advisor's Office, N7/30, shortly after September 1.

FACULTY PROGRAMS

A Faculty Program in Psychology is a sequence of courses which represents a lesser degree of

specialization than a Major or an Honours program. For further details see program information at the beginning of the Arts section.

GRADUATE STUDY

The adviser to Major students will, whenever possible, assist students in planning their courses to coincide with their professional aims. Most graduate schools require not only a record of high achievement, but also adequate performance on some entrance examinations such as the Graduate Record Examination and the Miller Analogies Test, as well as letters of recommendation.

OLD PROGRAMS (FOR RETURNING STUDENTS)

Psychology in Relation to Problems in Education

U3 Courses: Psychology 204-406B; Education 413-406A; plus 12 credits from Psychology 204-412A, 413D, 414D, 421B, 427A, 428B, 457B, Educational Psychology 414-346A, 456A, 492B, 495B or any course in the option list for U2 not already chosen.

Organizational Psychology Option

Important: Students in this program must first pick up a *permission slip* from the Psychology adviser and then go to the Management Undergraduate Office, Room 453, Samuel Bronfman Building, 1001 Sherbrooke West, to sign up for all Management courses and obtain *sectioning slips.*

U3 Courses: 204-411D; plus 6 credits from the following (3 credits may be substituted from the U2 psychology list): 204-400B, 401D, 403A, 404B, 405D, 406B, 450D; plus 9 credits from: Management 272-421A, 422A,B, 423A,B, 425A,B, 275-451A,B, 452A,B, 276-465A,B, 279-501A, Sociology 166-420A, 421B.

Major in Philosophy and Psychology

U3 Courses: Philosophy 107-321D; plus 3 credits from Philosophy courses. Psychology 204-400B, 403A; plus 6 credits to be selected from 401D, 404B or 425A; plus 3 credits in Psychology or Philosophy.

Joint Honours in Psychology and Linguistics

The *Psychology* (204) part of the program includes one course in statistics: either 204-305A,B, or 204-307B, for *three credits.* Students must complete four of the five basic courses in psychology: Learning, Motivation, Perception, Thinking and Laboratory Methods, for a total of *twelve credits.* Both the three-credit statistics requirement and the twelve-credit basic course requirement must be completed during the U1 or U2 years. Students must complete *two* of the *six-credit* one year sequences introducing specialized areas of psychological knowledge, for a total of *twelve credits.* The Psychology Honours courses must be taken in their appropriate years: 204-380D in U2, and 204-403A, 480B and 481D in U3, for a total of *eighteen credits.*

The *Linguistics* (104) requirement includes Linguistics 104-200A,B; 201A,B; 350A, 351B, 360A, 361B, 425A, and 490A. Students are required to take *either* Psychology 204-425A *or* Linguistics 104-525A, but *not both.* The total program requirement is *72 credits.*

COURSE DESCRIPTIONS

See Psychology in the Science section of this Announcement.

RELIGIOUS STUDIES (260)

Professors – C.J. ADAMS; R.C. CULLEY; D.J. HALL; J.C. McLELLAND
Associate Professors – J.A. BOORMAN; E.J. FURCHA; W.M. LAWLOR; D.R. RUNNALLS; R.W. STEVENSON *(on leave first term 1982);* F. WISSE; K. YOUNG
Assistant Professors – T. RAHULA; N.T. WRIGHT
University Lecturers – A. HEJIB *(on leave 1982-83).*
Faculty Lecturers – G. JOHNSTON; M. PEASTON

William and Henry Birks Building, 3520 University Street, Montreal, PQ, H3A 2A7, Telephone: 392-4827.

Courses are offered to students in other Faculties and Schools in the University through the Faculty of Religious Studies. They may be taken as individual electives, or through the Major and Honours programs in Religious Studies which can lead to teaching, social work, professional religious service, and graduate study in religion or theology. Religious Studies courses may be usefully combined with other concentrations, e.g. Art History, Classics, Jewish Studies, History, Philosophy.

For general information on courses and Major and Honours programs, consult the Adviser, Professor Young, Room 107, 392-4835. For specific

course information consult the instructor.

Majors and Honours students must consult the Adviser prior to registration each year.

MAJOR IN RELIGIOUS STUDIES

A Major in Religious Studies consists of 54 credits chosen as follows:

1) At least 36 credits from the Religious Studies courses described below. (Major Students may also choose their courses from the B.Th. program in the Faculty of Religious Studies Announcement and certain courses in the Jewish Studies Program - see *Core Courses in Other Departments,* below - after consultation with the Adviser.) Students must choose at least one full course (6 credits) in a tradition other than their own.

2) The remaining 18 credits may be from those indicated in 1) above or from approved Related Courses (see below).

INTERDISCIPLINARY MAJOR

The Interdisciplinary Major programs may be arranged in consultation with the Adviser. Joint programs are in operation between Religious Studies and Classics, Philosophy, and Art History.

HONOURS IN RELIGIOUS STUDIES

The Honours program in Religious Studies offers a degree of analysis and concentration beyond that of the Major program through course work, intensive research and discussion with peer groups.

There are no prerequisites for entry to the program which will normally be at the beginning of the first year. Students must maintain a GPA of 2.8, or 3.5 for First Class Honours, in addition to obtaining a B or higher in each program course.

The program consists of a minimum of 66 credits chosen as follows:

1) At least 48 credits from the Religious Studies courses described below. (Honours students may also choose from the B.Th. program in the Faculty of Religious Studies Announcement, and certain courses in the Jewish Studies Program - see *Core Courses in Other Departments,* below -after consultation with the Adviser. In special cases, permission may be given for admittance to graduate seminars in the Faculty of Religious Studies.) Among these the following are required: 260-201A and 202B, 252A and 253B in U1; 260-355A in U2; 500B in U3; one course (6 credits) in a religious tradition other than the student's own in U2 or U3.

2) The remaining 18 credits may be from those indicated in 1) above or from approved Related Courses (see below).

JOINT HONOURS PROGRAMS

Programs may be arranged in consultation with the Adviser.

Course Descriptions

- *Denotes not offered 1982-83.*

260-201A THE RELIGIONS OF THE ANCIENT NEAR EAST. (3 credits). Deities, death and rebirth in the religions of ancient Egypt, Mesopotamia and Canaan; myth and ritual with reference to the geographical, historical and cultural conditions which influenced religious expression.
Professor Runnalls

260-202B THE RELIGION OF ANCIENT ISRAEL. (3 credits). An examination of the religion of Ancient Israel by a study of selected texts (narratives, laws, prophetic sayings, wisdom traditions, and psalms) from the Hebrew Scriptures/Old Testament in translation.
Professor Culley

260-252A HINDUISM AND BUDDHISM. (3 credits). The interaction of Hinduism and Buddhism in India with special reference to the law of Karma, caste, women, ritual, death, yoga, and liberation. Determination of interpretative principles for understanding the religious psychology of Hindus and Buddhists.
Professor Young

260-253B THE RELIGIONS OF THE FAR EAST AND ISLAM. (3 credits). Harmony with nature, society, and cosmos to be explored through the religions of the Far East (Confucianism, Taoism, Buddhism and Shinto). Islam as submission to the will of God to be explored through the Muslim views of God, scripture, prophecy, law, theology, community, art and mysticism.
Professor Young

260-257D INTRODUCTORY SANSKRIT. (6 credits). To develop basic language and reading skills.
Professor Rahula

- **260-258D INTRODUCTORY PALI.** (6 credits; prerequisite: 260-257D or equivalent). To develop basic language and reading skills.
Professor Rahula

260-280D ELEMENTARY NEW TESTAMENT GREEK. (6 credits). An introduction to the grammar and syntax of New Testament Greek.
Professor Wisse

260-300B POST-BIBLICAL JEWISH TRADITION. (3 credits). The origins of Rabbinic Judaism: a survey of Jewish history and thought from Ezra to the Tannaim; oral tradition; Torah interpretation in the Mishnah and Midrashim.
Professor Runnalls

- **260-301B JEWISH SECTARIAN THOUGHT (200 B.C.E. - 200 C.E.).** (3 credits; prerequisite: Religion

300A or the consent of the instructor). The religion and literature of sectarian groupings: Apocalyptic thought; Wisdom; Dead Sea Scrolls; Josephus.
Professor Runnalls

260-304A PROPHECY IN ANCIENT ISRAEL. (3 credits). A study of prophecy in Ancient Israel as an example of the phenomenon of the intermediary (prophet, shaman, diviner, medium) in religious traditions. Selections from the prophetic writings of the Hebrew Scriptures/Old Testament will be read in translation (Amos, Hosea, Isaiah, Jeremiah, Ezekiel).
Professor Culley

260-310D THE NEW TESTAMENT: ITS MAKING AND MEANING. (6 credits). An introduction to the critical methodology and main issues of New Testament studies. The emphasis will be on developing exegetical skills.
Professor Wright

260-320D A HISTORY OF CHRISTIAN THOUGHT. (6 credits). A survey of the development of Christian thought from the post-apostolic period to the present day, in relation to the concurrent cultural and philosophical movements. The work of prominent Christian thinkers, ancient, medieval and modern, will receive special attention.
Professor Hall

260-322A THE ANCIENT CATHOLIC CHURCH (TO A.D. 325). (3 credits). This course covers the growth of the Christian tradition in the period from the reign of Nero to the Council of Nicaea A.D. 325. Special attention is paid to the setting within Roman Imperial History. Lectures are given on the outstanding teachers of the Christian faith.
Professor Johnston

260-323B THE ANCIENT CATHOLIC CHURCH (A.D. 325-604). (3 credits). This course is a continuation of 322A and covers the period from A.D. 325 to 604. Special attention is paid to the development of Christian theology, the Eastern Byzantine Church and the significance of the Papacy and the faith.
Staff

260-325A ALTERNATE LIFESTYLES IN THE CHRISTIAN TRADITION. (3 credits). Focus on groups and individuals within Christendom who chose to develop an ethos or lifestyle which differed significantly from that of the majority of people at any given time, e.g. hermits, Albigenses, Brothers of the Common Life, Amish, Shakers.
Professor Furcha

260-335B THEOLOGICAL ANTHROPOLOGY. (3 credits). Is the process of becoming a religious person within the Christian tradition part of the same process as becoming more fully human? Several world-views operative in contemporary North America will be studied along with their theological implications. (Given in alternate years).
Professor Lawlor

- **260-336B CONTEMPORARY THEOLOGICAL ISSUES.** (3 credits). Theological method – scriptural, doctrinal, correlation – is utilized to reflect on such problems as liberation and development (problems studied may differ from year to year). This study emphasizes how theological perspectives differ from and complement positions assumed by other disciplines. (Given in alternate years.)
Staff

260-338A WOMEN AND THE CHRISTIAN TRADITION. (3 credits). An historical and critical examination of the factors that have contributed to the image of women in the Christian tradition, emphasizing archetypal figures such as Eve, Mary, virgin, wife and witch.
Staff

260-339B HINDU AND BUDDHIST IMAGES OF THE FEMININE. (3 credits). An analysis of the richness (and ambivalence) of feminine imagery from three perspectives: *mythic* (goddesses, epic figures); *philosophic* (material nature, the power to create, wisdom, compassion); *human* (mothers, wives, daughters, temptresses, nuns). (Given in alternate years).
Professor Young

260-340B RELIGION AND THE SCIENCES. (3 credits). Philosophies of science and of religion have created a more positive dialogue on questions of method, symbolism and rationality. We examine key issues (e.g. creation and evolution; objectivity and involvement; determinism and freedom) raised by natural and social sciences, and various possible solutions. (Given in alternate years).
Professor McLelland

- **260-345B RELIGION AND THE ARTS.** (3 credits). Myths and symbols approached through literary criticism to examine art forms as self-images, social critique and forms of ultimate concern: concentration on Western culture. (Given in alternate years).
Professor McLelland

- **260-346B MYTH AND SYMBOL IN HINDU AND BUDDHIST ART.** (3 credits). Explores Hindu concepts of deity and the cosmos through slides of Vishnu, Shiva, the Goddess, and temple architecture. Analyses the Buddha's life, samsara as the human predicament, and nirvana as the human goal, through Asian art. (Given in alternate years).
Professor Young

- **260-347B TOPICS IN RELIGION AND THE ARTS.** (3 credits). Selected themes in the interaction between religion and the arts, to vary from year to year.
Staff

260-351A PHENOMENOLOGY OF RELIGION. (3 credits). A cross cultural comparison of a religious theme (to vary each year). For 1982-83: Theories and Techniques of Meditation. Based on analysis of scriptural texts and commentaries, Hindu, Buddhist, Jewish, Christian, and Muslim views on meditation are explored to provide a basis for understanding phenomenologically different types of traditional meditation and situating them in the current spectrum of North American religious life.
Staff

260-352B THE BIRTH OF HINDU PHILOSOPHY. (3 credits; prerequisite: 260-252A or permission of the instructor). The development of Hindu religion and philosophy is traced from Vedic ritualism through Upanisadic speculation into the six classical philosophical systems *(darsanas)*. Attention is given to their implications for the Hindu religious world view. (Not open to students who have taken 260-451D).
Professor Stevenson

• **260-353A GANDHI, HIS LIFE AND THOUGHT.** (3 credits; prerequisite: 260-252A or permission of the instructor). The sources and nature of his religious thought and its development. Special attention will be given to such Gandhian concepts and techniques as non-violence, satyagraha, fasting and non-attached action. (Given in alternate years).
Professor Stevenson

• **260-354A RELIGION AND SOCIETY IN CLASSICAL INDIA.** (3 credits; prerequisite: 260-252A or permission of the instructor). Rise and development of Hindu theism, social systems and values, from the Epic to the early Medieval period, are examined through a study of the Dharmasastra, Epic and Puranic literature (in translation). (Not open to students who have taken 260-451D).
Professor Stevenson

260-355A THE STUDY OF RELIGION. (3 credits). History of the study of religion with concentration on the major theories concerning the nature and origin of religion. Methods for the study of religion will be examined to develop students' awareness of the implications of methodology. (Not open to students who have taken 260-500D).
Staff

260-357D INTERMEDIATE SANSKRIT. (6 credits; prerequisite: 260-257D or permission of the instructor). Advancement of grammar and vocabulary with readings in epic and similar texts.
Professor Rahula

260-358D INTERMEDIATE PALI. (6 credits; prerequisite: 260-258D or permission of the instructor). Advancement of grammar and vocabulary with readings in selected texts.
Professor Rahula

260-361A RELIGIOUS BEHAVIOUR. (3 credits). A study of the psychological origins of religion, of some aspects of the religious life (e.g. prayer, conversion, mystical experiences), and of some contempory religious phenomena (e.g. marginal religious groups, the charismatic movement, glossolalia). The views of Freud and Jung are also considered. (Given in alternate years).
Professor Peaston

260-370A THE HUMAN CONDITION. (3 credits). A consideration of the values of contemporary humanity in relation to our natural environment, our social situation and our own "nature"; and the connection between those values and religious conviction or the human quest for ultimate meaning.
Professor Boorman

260-381A ADVANCED NEW TESTAMENT GREEK. (3 credits; prerequisite 260-280D or equivalent). A review of grammar and syntax with an emphasis on rapid reading of sections chosen from different parts of the New Testament. (Not open to students who have taken 260-380D).
Professor Wright

260-382B EXEGESIS OF THE GREEK NEW TESTAMENT. (3 credits; prerequisite 260-381A or equivalent). An intensive seminar in exegesis on the basis of representative passages chosen from different parts of the New Testament. (Not open to students who have taken 260-380D).
Professor Wright

260-390D ELEMENTARY BIBLICAL HEBREW. (6 credits). An introduction to the grammar and syntax of Biblical Hebrew. Emphasis is placed on both the oral and the written language.
Professor Runnalls

• **260-454B MODERN HINDU THOUGHT.** (3 credits; prerequisite 260-352B or 354A or permission). A study of the developments in religious thought with special reference to such thinkers as Ram Mohan Roy, Dayananda Saraswati, Ramakrishna, Vivekananda, Gandhi, Tilak, Aurobindo, and Radhakrishnan. (Given in alternate years).
Professor Stevenson

• **260-455D BUDDHISM.** (6 credits). Life and teachings of the Buddha, the development of Indian Buddhism with special reference to the Theravada and Mahayana traditions, the expansion of Buddhism outside India. (Given in alternate years).
Professor Rahula

• **260-457D ADVANCED SANSKRIT.** (6 credits; prerequisite: 260-357D or permission of instructor). Critical reading of selected Sanskrit texts.
Professor Rahula

260-490D ADVANCED BIBLICAL HEBREW. (6 credits). Rapid reading of prose selections. Class hours devoted to discussion of grammar based

on readings from biblical Hebrew.
Professor Culley

260-496A,B SPECIAL STUDIES. *(3 credits). Topics to be arranged.
Staff

260-497A,B RESEARCH SEMINAR. *(3 credits).
Staff

260-500B HONOURS METHODOLOGY. (3 credits; prerequisite: 260-355A, and advanced undergraduate study in a major religious tradition at the 400 level). Research in an area of specialization and practical application of method in the preparation of a major paper. (Not open to students who have taken 260-500D).
Staff

- **397-504D THE ISLAMIC TRADITION.** (6 credits). The Islamic Community and the elements of its tradition – scripture, prophet, doctrine, practices, institutions – considered historically and in terms of religious meaning. (Given in alternate years).

260-551A INDIAN LOGIC I. (3 credits; prerequisite: 260-257D or equivalent). The logic and epistemology of Nyaya-Vaisesika and Mimamsa using as basic texts Annambhatta's *Tarkasamgraha* and Laugaksibhaskara's *Arthasamgraha.*
Professor Young

260-552B ADVAITA VEDANTA. (3 credits; prerequisite: 260-551A). The relation of Nyaya-Vaisesika and Mimamsa to Kevaladvaita with concentration on Samkara's *Brahmasutrabhasya,* Padas 1 and 2.
Professor Young

- **260-553A RELIGIONS OF SOUTH INDIA I.** (3 credits). Topics include: definitions of Tamil identity, the relation of *akam* to *bhakti* poetry, the theology of the Alvars and Nayanmars, inter-religious and sectarian competition, the motif of pilgrimage, questions of caste and women.
Professor Young

- **260-554B RELIGIONS OF SOUTH INDIA II.** (3 credits; prerequisite: 260-553A). Analysis of the following: *sampradaya; ubhayavedanta;* comparison of Visistadvaita and Saiva Siddhanta with reference to selected themes that illustrate the Tamil contribution; the relationship of theology to the sociology of knowledge in Tamilnad.
Professor Young

*Students wishing to take this course must have the permission of the Religious Studies Adviser.

Core courses in other Departments

In consultation with the Adviser, students may choose certain courses in other departments (e.g. those listed below) for credit towards the Core requirements of their Major or Honours program. They must, however, fulfil any requirements laid down by the Department concerned.

Consult departmental listings for more complete descriptions. Arabic courses are listed under Islamic Studies or in the Announcement of the Faculty of Religious Studies. Note that not all courses are available in any given year.

INSTITUTE OF ISLAMIC STUDIES.

397-521D INTRODUCTORY ARABIC. (6 credits).

397-522D LOWER INTERMEDIATE ARABIC. (6 credits).

397-623D HIGHER INTERMEDIATE ARABIC. (6 credits).

397-624D ADVANCED ARABIC. (6credits).

JEWISH STUDIES PROGRAM.

135-211A JEWISH STUDIES I: THE BIBLICAL PERIOD. (3 credits).

135-212B JEWISH STUDIES II: THE TALMUDIC PERIOD. (3 credits).

135-213A JEWISH STUDIES III: THE MEDIEVAL PERIOD. (3 credits).

135-214B JEWISH STUDIES IV: THE MODERN PERIOD. (3 credits).

135-310A BELIEVERS, HERETICS AND CRITICS. (3 credits).

135-316A SOCIAL AND ETHICAL ISSUES IN JEWISH LAW. (3 credits).

135-317B SOCIAL AND ETHICAL ISSUES IN JEWISH LAW. (3 credits).

135-319B JUDAISM AND THE OCCULT. (3 credits).

135-324B BIBLICAL INTERPRETATION IN ANTIQUITY. (3 credits).

135-358A TOPICS IN JEWISH PHILOSOPHY. (3 credits).

Additional courses in Jewish Studies may be available to students sufficiently qualified in Hebrew language.

Related Courses

Students have the option of completing up to 18 credits towards their Honours or Major requirements in Related Courses, i.e. courses having a significant religion content, given in other faculties, departments, etc. They may be chosen, in consultation with the program Adviser, from the Faculty of Education, the Faculty of Music, and the following Departments and Programs in the Faculty of Arts:

Anthropology	German
Art History	History

Classics	Italian
East Asian Studies	Philosophy
English	Political Science
French Canada Studies	Sociology

Note that only some of the courses offered in the above Faculties and Departments qualify as related courses. Courses from other Faculties or Departments may also be considered appropriate by the Adviser, depending upon their content, and the student's interests and qualifications.

Students taking Related Courses must fulfil any requirements laid down by the Faculty or Department concerned (permission from the Dean or instructor, prerequisites, grades, etc.).

Languages

Students taking introductory language courses as part of a Religious Studies program are strongly advised to take the advanced course also.

Instruction in the languages of some other religious traditions (such as Ancient Egyptian, Tibetan) may be available in any given year. Ask the Adviser for further information.

RUSSIAN AND SLAVIC STUDIES (141)

Visiting Professor – V. GREBENSCHIKOV
Associate Professors – P.M. AUSTIN *(Chairman, on leave 1982-83);* A. FODOR *(Acting Chairman)*
Assistant Professor – DORA SAKAYAN

Room 660, Samuel Bronfman Building, 1001 Sherbrooke St. West, Montreal, PQ, H3A 1G5, Telephone: 392-4616.

Many opportunities are open to students with qualifications in Rusian and other Slavic studies. Students may be interested in the organization of human society, comparative literature, linguistics – Russian studies are highly relevant to all of these. In addition, because of similar problems in geography, climate, industrial and economic growth Russian studies may have a particular fascination for the Canadian student. Knowledge of Russian can be extremely advantageous, if not essential for future scientists also. After English the highest proportion of the world's scientific literature is published in Russian. Besides Russian, our Department covers the intellectual life of almost all of Eastern Europe. We have the facilities to offer courses in Bulgarian, Hungarian, Polish and Ukrainian. Since most of those countries have academic exchange programs with Canada, well-qualified students should not encounter much difficulty in continuing their university studies in Russia or in Eastern Europe.

MAJOR PROGRAM

The Major program consists of at least 54 credits (of which at least 42 must be in the Department, preferably twelve credits in U-1, twelve in U-2 and 18 credits in U-3. Normally the 42 credits should not include more than 6 credits for courses in literature in translation (218A, 219B, 223A, 224B) and 6 credits for courses in languages and literatures other than Russian offered by the Department). Various sequences of courses are possible but close consultation with the Department and approval of proposed sequences is essential. Please consult the office at 392-4610 or 392-4616. Admission is based on personal interviews to establish how much Russian has been taken previously, if any, and to work out a reasonable sequence for the individual.

HONOURS PROGRAM

The Department offers a full Honours program in Russian. Single Honours in Russian require at least 60 credits in the Department to be taken during the three university years out of a total of 90 credits. In addition, at least a second class average (B) must be obtained. All Honours programs require consideration and approval by the Department. Normally 200 level courses are taken in U-1, 300 level ones in U-2 and 400 level courses in U-3. However, many exceptions may occur depending on students' abilities. Telephone 392-4610 or 392-4616 for information.

JOINT HONOURS PROGRAMS

The Department also offers Joint Honours programs in cooperation with the Departments of Classics, French, Geography, German, Hispanic Studies, History, Italian, Linguistics, Political Science. These programs also require an overall total of 90 credits with a B average over the three university years. Two courses (12 credits) in Russian and two courses (12 credits) in the cooperating Department are normally taken each year. As in Single Honours and Majors all programs require consideration and approval by the Departments involved. For information telephone 392-4610 or 392-4616.

Course Descriptions

- *Denotes not offered 1982-83.*

141-210D RUSSIAN LANGUAGE. (6 credits; Text: to be announced). Reading, grammar, translation, oral practice.
Staff

- **141-212D RUSSIAN READING COURSE.** (6 credits). Method and practice of translation. The first half of the course will be devoted to an introduction to Russian, the second half to actual translation of texts from various fields of interest. This course

is intended for students wishing to learn to read Russian.
Staff

141-215D RUSSIAN LANGUAGE INTENSIVE. (12 credits). Intensive language course, covering the first two levels in one year rather than the usual two. Students may, at the discretion of the Department, revert to Russian 210D after four weeks at the latest. Note that such a transfer has credit implications.
Professor Sakayan

141-217B ACCELERATED INTRODUCTION TO RUSSIAN STUDIES. (3 credits; Prerequisite: Evidence of ability in modern or classical languages and Departmental permission). This course is intended for the student who has already shown ability in modern or classical languages, and who wants to obtain a good knowledge of Russian language, literature and civilization in a short time. Successful completion of this course will normally permit students to take the higher level courses in Russian.
Staff

141-218A SOVIET LITERATURE (UP TO WORLD WAR II). (3 credits; Prerequisite: None, however, courses in modern Russian history are highly recommended). This course, conducted in English, describes the emergence of Russian literary life after the Revolution. It examines the activities of authors' groups during the 'twenties and the creation of the Writers' Union. The term, "socialist realism", is explained with its ramifications in the development of Soviet literature. Gorky, Babel, Mayakovsky and others are discussed in detail.
Professor Fodor

141-219B SOVIET LITERATURE (AFTER WORLD WAR II.) (3 credits; Prerequisite: None; however courses in modern Russian history are highly recommended). The impact of World War II on Soviet literature. Post-war changes in official literary policy. The period of "thaw", and debates on the principles of creative freedom. The three Nobel prize winners. The emergence of young writers with new voices. This course will be conducted in English.
Professor Fodor

141-220D RUSSIAN LANGUAGE. (6 credits; Prerequisite: Russian 210D or equivalent; Text: Stilman and Harkins, *Introductory Russian Grammar)* Reading, translation, conversation.
Staff

- **141-222D RUSSIAN CIVILIZATION IN THE TWENTIETH CENTURY.** (6 credits; Prerequisites: Russian 210D or equivalent and permission of the Department). This is an introduction to the changing relationships between Russian language, literature, thought and culture in the twentieth century. It will be conducted to some extent in Russian.
Staff

- **141-223A RUSSIAN WRITERS OF THE 19th CENTURY.** (3 credits; Prerequisite: None). The course, to be given in English, is designed for students interested in Russian literature and its authors. The course will offer students a broad overview acquainting them with the main Russian literary currents of the 19th century and with the lives and destinies of its writers.
Professor Austin

- **141-224B THE RUSSIAN WRITER OF THE TWENTIETH CENTURY.** (3 credits; Prerequisite: None). This course, given in English, examines the role of the creative writer in the conditions of Russian society of the twentieth century. Special emphasis is laid on factors affecting the writer's art as well on the writer's own reflections upon his craft.
Professor Austin

141-225D RUSSIAN LANGUAGE. (Continuation of Russian 215D). (6 credits; Prerequisite: Russian 215D or equivalent. Registration limited). Students will acquire a good working knowledge and appreciation of the language and will be able to go directly into advanced courses in Russian language and literature.
Staff

141-226D OUTLINES OF 19th CENTURY RUSSIAN LITERATURE. (6 credits; Prerequisites: Russian 215D or equivalent, and the permission of the Department; *Texts:* Mirsky, *History of Russian Literature:* Knopf; Slonim, *Outlines of Russian Literature:* Oxford; Other prescribed texts to be selected). A general introduction to Russian prose, poetry and drama in the 19th Century. Selected texts will be read in the original and discussed. The course will be conducted to some extent in Russian.
Staff

141-227D INTRODUCTION TO SOVIET RUSSIAN LITERATURE. (6 credits; Prerequisites: Russian 215D or equivalent, and the permission of the Department; *Texts:* Reddaway (ed.) Soviet Short Stories, Vol. 2, Harper et al., editors, *New Voices;* Other prescribed texts to be selected). Selected texts will be read in the original and discussed. The course will be conducted mainly in Russian.
Professor Fodor and Staff

141-240D INTRODUCTION TO UKRAINIAN STUDIES. (6 credits; Prerequisite: Permission of the Department). An introduction to the study of Ukrainian civilization with emphasis on the position of Ukrainian as an Eastern Slavic language with an ancient culture, on the literature of the 19th and 20th centuries, and on the role of the Ukrainian writer in his society.
Staff

- **141-245D INTRODUCTION TO BULGARIAN STUDIES.** (6 credits; Prerequisite: Permission of the Department). An introduction to the study of Bulgarian civilization. Emphasis will be laid on

Bulgarian as a development of the Slavs' first literary language, on Bulgarian literature from the earliest times and on the role of the Bulgarian writer in his society.
Staff

141-255D INTRODUCTION TO POLISH STUDIES. (6 credits; Prerequisite: Permission of the Department). An introduction to the study of Polish civilization, with emphasis on Polish as a Western Slavic language, on Polish literature of the 19th and 20th centuries particularly, and on the role of the Polish writer in his society.
Staff (Consult the Department)

141-300D RUSSIAN LANGUAGE AND LITERATURE IN THE 19th CENTURY. (6 credits; Prerequisites: Russian 220D or equivalent and permission of the Department). Grammar. Readings from selected authors, conversation and composition. The course will be conducted in Russian.
Staff

• **141-320D RUSSIAN CIVILIZATION IN THE NINETEENTH CENTURY.** (6 credits; Prerequisites: Russian 220D, 222D or equivalent and permission of the Department). This course, given in Russian, discusses the relationship between Russian language, literature, thought and culture from Karamzin to Chekhov.
Staff

141-340D INTERMEDIATE UKRAINIAN STUDIES. (6 credits; Prerequisite: 240D or permission of the Department). Second level Ukrainian studies.
Staff

141-342B INTRODUCTION TO HUNGARIAN STUDIES. (3 credits; Prerequisite: Permission of the Department). An introduction to the study of Hungarian civilization with emphasis on Hungary's written language and its development since the 11th century. The Turkish impact; the influence of Germanic and Slavic cultures. Petöfi and the 19th century writers. Modern literature. Students will be given opportunity to study the language as well.
Professor Fodor and Staff

141-343B INTERMEDIATE HUNGARIAN STUDIES. (3 credits; Prerequisite: 141-342B or permission of the Department). Second level Hungarian studies with emphasis on language.
Professor Fodor and Staff

• **141-345D INTERMEDIATE POLISH STUDIES.** (6 credits; Prerequisite: 255D or permission of the Department). Second level Polish studies.
Staff

141-350D ADVANCED RUSSIAN LANGUAGE AND SYNTAX. (6 credits; Prerequisites: Russian 225D or equivalent, and permission of the Department). Prose composition, translation, essay writing. An introduction to Russian stylistics.
Professor Austin

141-355D RUSSIAN COMPARATIVE GRAMMAR. (6 credits; Prerequisites: Russian 225D or equivalent and permission of the Department). This course, given principally in Russian, will discuss Russian structurally from the viewpoint of the non-Russian student. Each student will prepare at least one original paper to be discussed in class.
Professor Grebenschikov

141-360D THE RUSSIAN NOVEL FROM 1820 to 1860. (6 credits; Prerequisites: Russian 225D or equivalent, and permission of the Department). The development of the Russian novel before Tolstoy and Dostoevsky. Reading texts will be chosen from the prose works of Pushkin, Lermontov, Gogol', Turgenev and Goncharov. This course will be conducted in Russian.
Professor Austin

• **141-370D PUSHKIN AND HIS CONTEMPORARIES.** (6 credits; Prerequisites: Russian 225D or equivalent and permission of the Department). The Golden Age of Russian poetry. The course will be conducted in Russian.
Staff

• **141-410D DRAMA IN RUSSIAN LITERATURE.** (6 credits; Prerequisite: Permission of the Department). Representative works of the 19th and 20th centuries are studied and discussed. Reading texts will be chosen from the plays of Fonvizin, Griboedov, Pushkin, Gogol', A. Ostrovsky, Turgenev, Chekhov, Gor'ky and Kataev. The course will be conducted in Russian.
Staff

• **141-420D RUSSIAN CIVILIZATION OF THE EARLIER PERIOD.** (6 credits; Prerequisite: Permission of the Department). This course, given in Russian, discusses the development of Russian culture from the earliest times to the death of Catherine de Great.
Staff

141-450D TWENTIETH CENTURY RUSSIAN LANGUAGE AND LITERATURE. (6 credits; Prerequisites: Russian 350D or equivalent and permission of the Department). Specific features of the style of modern literary Russian will be analysed. The origins and development of Soviet Russian literature will be studied in detail. The course is primarily intended for Honours students. It will be conducted in Russian.
Professor Fodor and Staff

141-460D THE RUSSIAN NOVEL FROM 1860 TO 1900. (6 credits; Prerequisites: Russian 350D or equivalent and permission of the Department). The Golden Age of the novel in Russian literature. The major works of Turgenev, Dostoevsky and Tolstoy will be read in the original and discussed in Russian.
Staff

141-470A INDIVIDUAL READING COURSE. (3

credits; Prerequisite: Permission of instructor). Supervised reading under the direction of a member of staff.

141-471B INDEPENDENT RESEARCH. (3 credits; Prerequisite: Permission of instructor). Supervised research under the direction of a member of staff.

- **141-505A LEO TOLSTOY AND HIS TIME (1847 TO 1870).** (3 credits; Prerequisite: Russian 300D, 360D or permission of the Department). The major works of Russia's most important writer up to and including *War and Peace* will be studied. Emphasis will be placed on Tolstoy's impact on the literary and cultural life of his society. The course will be conducted mainly in Russian. It differs from 460D in its exclusive emphasis on Tolstoy.
  Professor Fodor

- **141-506B LEO TOLSTOY AND HIS TIME (1870 TO 1910).** (3 credits; Prerequisite: Russian 300D, 360D, 505A or permission of the Department). Tolstoy's novels *Anna Karenina, Resurrection* and other works will be studied. Emphasis will be placed on the author's impact on the literary and spiritual life of his society. The course will be conducted mainly in Russian. It differs from the second part of 460D in its exclusive emphasis on Tolstoy.
  Professor Fodor

141 GRADUATE COURSES. Certain graduate courses are open to U-2 and U-3 students. Consult the Graduate announcement and the Department.

SCHOOL OF SOCIAL WORK (407)

Professors - MYER KATZ *(Director);* LOTTE MARCUS: EDWARD V. SHINER; DAVID E. WOODSWORTH

Associate Professors - SHIRLEY BRAVERMAN; SYDNEY DUDER; SHEILA GOLDBLOOM; JUDITH MAGILL; FRANK McGILLY; DIANE REICHERTZ; SHIRLEY STEELE; JAMES TORCZYNER; ELISABETH URTNOWSKI

Assistant Professors - JANE ARONSON; CAROLE CHRISTENSEN; INGRID COOPER; BEN ZION DALFEN; BARBARA HEPPNER; ESTELLE HOPMEYER; MICHAEL MacLEAN; JACK RABY; TRYNA ROTHOLZ; ERIC SHRAGGE; DOROTHY SIROTA; MARGARET-ANN SMITH; CAROL SPEIRS; ANNETTE WERK

Lecturers - DOROTHY BARRIER; MARGARET COSHAN; ZELDA HARRIS; ANNETTE HEBB; JOY LEPAGE

Wilson Hall, 3506 University Street, Montreal, PQ, H3A 2A7, Telephone: 392-5040.

BACHELOR OF SOCIAL WORK DEGREE (B.S.W.)

Educational Objectives

The Faculty of Arts, through the McGill University School of Social Work, offers an undergraduate program of professional studies in Social Work, leading to the Degree of Bachelor of Social Work (B.S.W.). The B.S.W. degree course has the following principal educational objectives:

1) To prepare students for professional practice in any one of a range of social service positions. (The B.S.W. degree represents the point of admission into the Corporation of Professional Social Workers of the Province of Québec and the Canadian Association of Social Workers).

2) To prepare selected students for entry into more specialized professional studies at the graduate level.

It is the policy of the School of Social Work to ensure that social workers are as diverse as the communities they serve, and when reviewing prospective applicants for the Special B.S.W. and the undergraduate B.S.W. programs, special consideration is given to persons of varied backgrounds, including members of minority groups, members of low-income communities and those with paid or volunteer community work experience.

The B.S.W. degree is offered in two ways: as a three-year undergraduate B.S.W. program and as a Special B.S.W. program for applicants who already have an undergraduate degree in another subject.

Admission

1. THREE-YEAR UNDERGRADUATE B.S.W.

Three categories of applicants are eligible to apply for admission to the three-year Bachelor of Social Work:

(i) Applicants who have completed two years of CEGEP or equivalent studies. Students who have not taken a course in statistics will be required to take an equivalent course during their undergraduate studies. Students who want to extend their preparation may wish to include courses in introductory psychology, introductory sociology and French, although these are not prerequisites.

(ii) Transfer Students

Students who have begun undergraduate degree programs either at McGill or at other universities may apply to transfer to the School of Social Work. Depending on the courses they have already completed, some credits may be transferable toward the B.S.W. degree. Transfer students are usually required to complete 60 McGill credits to receive a B.S.W. degree.

Enrolment is limited. Candidates, whether entering or transfer students, are expected to have better than average grades. Within the group of applicants who meet the academic requirements, preference is given to those who have had social work-related experience, paid or volunteer, and also to those who demonstrate personal suitability for the social work profession.

(iii) Mature Students

Residents of Canada who are 23 years of age or older, and who lack the academic background normally required for admission, may apply for entrance as mature students. To be considered for the B.S.W. program, applicants must have had significant paid or volunteer community work experience in related fields and be able to produce satisfactory recommendations from community social agencies with which they have been affiliated.

More details on entrance requirements can be obtained from:

Admissions Office
McGill University
845 Sherbrooke Street West
Montreal, PQ. Canada H3A 2T5
Telephone: (514) 392-5300

2. SPECIAL B.S.W.

A limited number of students with Bachelor's degrees are admitted into a Special B.S.W. program consisting of 48 credits of study over a 13 month period.

The minimum requirements for admission to the Special B.S.W. are as follows:

1. Bachelor's degree with a high standing in the final year; or, if graduating in the current year, in the last complete year.
2. Completion of at least 5 full courses (30 credits) in the social sciences.
3. An introductory course in statistics.

Normally candidates will not be considered unless their GPA is 3.0 or better. Within the group of applicants who meet this requirement, preference will be given to those who have had social work related experience, paid or volunteer, and also to those who demonstrate personal suitability for the profession of social work.

The Special B.S.W. is a full-time program of study. Those wishing to pursue this program follow a prescribed pattern of study starting with the initial summer session in May (6 weeks), the academic session (Sept. - April), and the second summer session (April - July of the following year).

Application for admission should be made at the School of Social Work.

Plan of Study

THREE-YEAR B.S.W.

a) The B.S.W. degree is awarded upon successful completion of 90 credits of study; it consists of a combination of professinal social work courses, supervised field practice and related courses drawn principally from the social sciences.
The 90 credits of study are made up as follows:
- a minimum of 48 credits (and a maximum of 60) must be social work courses
- a minimum of 18 credits (and a maximum of 30) must be social science courses
- any remaining credits (a maximum of 12) may be taken according to the student's own individual interests. If credits in French language are required, they will be taken from among the credits available after satisfaction of the minimum requirements of social work (48) and social science (18) credits.

The mix of these possible types of credits will vary according to each student's needs.

b) The distribution of the 48-60 credits of social work content over the three years will be approximately as follows:
UI - 12-15 credits
UII - 18-21 credits
UIII - 18-24 credits

c) *First Year Requirements*

For students entering their first year of Social Work, required courses are: Social Work 407-240A (Introduction to Social Work - 3 credits), 407-241A (Introduction to the Welfare State - 3 credits), and 407-255B (Social Work Practicum, 3 credits). They may take one or two other 3 credit social work courses. If a student opts to take *two* other social work courses, one of them will normally be 407-352A (The Public Social Services in Canada).

The remaining 15 or 18 credits of the first year of the program will be taken elsewhere in the Faculties of Arts and of Science. Consult this Announcement for course descriptions.

d) *Second Year Requirements*

B.S.W. II required courses are: Social Work 407-440A and Social Work 407-456D, plus at least one of 407-441B, 476B, 474B, 475A. &-12 credits will be taken elsewhere in the Faculties of Arts and of Science. The remaining credits can be social work electives. Research 407-270 is normally taken during this year.

e) *Third Year Requirements*

B.S.W. III required courses are: Social Work 407-458A/B and 480D, plus at least two of the following: 407-472, 473, 474, 475, 477, 487, 488, 497, 498. The remaining credits are to be used to complete the requirements for the B.S.W. degree.

SPECIAL B.S.W.

The Special B.S.W., for those holding an undergraduate degree, will be offered in thre time blocks: a summer session of 6 weeks, May - June, one regular academic year, and a summer session of 12 weeks, April-May-June. Students in this program will take 48 credits, including courses in social work practice, field practice, and policy. Required courses are Social Work 352L, 353L, 270L, 481A, 482B, 456D, 458, 480D and at least two of the following courses: 472, 473, 474, 475, 477, 487, 488, 497, 498. The remaining credits will be selected from other courses offered at the B.S.W. level.

Course Descriptions

• *Denotes not offered 1982-83.*

B.S.W. courses, with the exception of 240, 255, 353, 440, 441, 456, 472, 473, 476, 477, 480, 481, 482, 485, 487, 488, 489, 497 and 498, are open to non-social work students. Permission of the instructor, however, must be obtained prior to registration.

407-240A INTRODUCTION TO SOCIAL WORK. (3 credits; Corequisite: 407-241A. Open only to U1-BSW students). Frameworks for understanding the personal and subjective predicaments of selected client populations e.g. the elderly, the urban poor, single-parent families, children at risk, the handicapped. Examination of social legislation and social services. Introduction to social work practice concepts and methods.
Professor Urtnowski

407-241A INTRODUCTION TO THE WELFARE STATE. (3 credits; Corequisite: 407-240A. Open only to U1-BSW students). An introduction to the welfare state. Topics will include: comparative frameworks for analyzing the welfare state, ideologies and values of the Québec and Canadian welfare systems; historical origins of services. Attention will be given to the development of social work services. Poverty and social security measures will be examined in order to illustrate the general themes.
Professor Shragge

407-255B SOCIAL WORK PRACTICUM. (3 credits; Corequisite; 407-254D). An introductory field experience to provide U1 students with the opportunity to observe social work practice, to participate in the work of a social organization, to assume responsibility for a limited practice assignment, and to conduct critical analyses of their field experiences through conference discussions and individual tutorials.
Field Instruction Staff

407-270A,B INTRODUCTION TO SOCIAL WORK RESEARCH. (3 credits; Prerequisite: Introductory course in Statistics). This course is intended to help students make effective use of published research reports and agency statistics, and to show them how to conduct simple research projects. It covers problem formulation, research design, data collection, analysis and interpretation, use of the computer terminal, and report writing. Modular format.
Professor Duder

407-352A THE PUBLIC SOCIAL SERVICES IN CANADA. (3 credits). An introduction to the programs of public social services in effect in Canada in the fields of income, housing and health. The course seeks to acquaint students with the characteristics of these programs, and with the policy issues which surround them and to enhance the students' ability to evaluate the functioning of the programs. This is a modular course. Students submit one written assignment in each of the three fields.
Professor McGilly

407-353L INTRODUCTION TO PRACTICE. (6 credits). Introduction to the principles and practice of social work. Approaches to social problem identification and analysis. The role of the social worker as an agent of change or of social control. Elements of working with individual groups and communities. Laboratory periods will permit the application of course content to practice.
Professors Hopmeyer and Katz

407-440A GENERALIST SOCIAL WORK PRACTICE. (3 credits; Prerequisite - 407-254D, Corequisite - 407-456D). A systems approach to social work practice with emphasis on the development and understanding of alternative social work interventions. A look at the problem-solving process and the tasks and skills required of the social work practitioner in order to facilitate planned change. (Not open to students who have taken 407-455D).
Professors Werk and Rotholz

407-441B SEMINAR IN SOCIAL WORK PRACTICE. (3 credits; Prerequisite - 407-440; Corequisite - 407-456D). This course will focus on the theory of casework practice with individuals and families. Students will be taught the techniques of family and individual counselling by means of lectures and videotapes.
Professors Steele and Christensen

407-451A CHILDREN'S NEEDS AND SOCIAL SERVICES. (3 credits). The identification and analysis of the needs of children and their families. Consideration of the processes of selected social services, e.g. day care, visiting homemakers, foster family and institutional care, adoption,

etc., designed to support, supplement and substitute for the family. Special emphasis will be placed on social legislation related to neglected, abused and dependent children.
Professor Reichertz

407-452A SOCIAL WELFARE ORGANIZATIONS AND DISADVANTAGED CLIENTELE. (3 credits). An examination of the structure of organizations serving the needs of socially disadvantaged persons or groups, and the processes through which such services are provided. Particular attention will be paid to the definition, screening and serving of disadvantaged clients as compared to those drawn from more "privileged" groups in society. Strategies for changing such organizations will be explored.
Staff

407-453B YOUTH AND YOUNG ADULTS: SOCIAL NEEDS AND SERVICES. (3 credits). The physical, psychological and social development of youth and young adults and the relationship of such development to demands of the social environment. Emphasis is on the effects of societal change on family roles, interpersonal relationships, educational and work achievement, youths' community role, social services for youth and young adults.
Profesor Dalfen

407-454A SOCIAL SERVICES IN THE HEALTH FIELD. (3 credits). An examination of the relationship between illness and social conditions. Social planning, practice and research aspects of health care and the delivery of health services. An evaluation of current and developing professional roles of social workers in health teams, with particular emphasis on social rehabilitation of the physically and mentally ill.
Staff

407-456D FIELD PRACTICE. (6 credits; Prerequisite: 407-240 and 241. Supervised educational experiences in social work practice designed to integrate practice with theoretical knowledge. Through field placements in university affiliated teaching centres, students will work with individuals, families, groups and communities, receiving both individual and group instruction. Two days per week, September to mid April.

407-457B LEGAL PROBLEMS OF THE POOR. (3 credits). A lecture-and-seminar course on law and social welfare, with the emphasis largely on the social-legal protection and redress available to them. Aspects of Canadian civil law and criminal law will be reviewed. Emphasis will be placed on the Québec scene, with landlord-tenant, contract and debtor, matrimonial regimes, parental responsibility and social insurance. The total Canadian perspective will be considered in areas of divorce, unemployment insurance, arrest, and bail.
Miriam Grassby

407-458A,B SOCIAL POLICY AND ADMINISTRATION. (3 credits; Prerequisite: 407-352A). An analysis of the administrative structures and dynamics of social service organizations, with special attention to Québec policies and to the role of social workers. Examples are drawn from current field experiences of students.
Professors Woodsworth and Shragge

407-461A SEMINAR IN CORRECTIONS. (3 credits). An examination of criminal behaviour in Canada and the U.S., and the correctional system designed to deal with such behaviour. Attention will be paid to the systems that process the offender (judiciary, and penal systems and the probation and parole services) with particular emphasis on the effects of these systems on the offender.
Professor Cooper

407-462B POVERTY, INEQUALITY AND CAPITALISM. (3 credits). An examination of the notion of social welfare from the perspective of poverty and inequality. Attention is given to socio-economic dynamics of inequality in a capitalist state rather than programs designed to combat poverty. Specific topics include inequality in relation to income distribution and redistribution, wealth, incentives, economic growth, inflation, consumption, rich and poor nations. Pre-requisite: 407-352.
Professor Shragge

407-463B SOCIAL WORK PRACTICE WITH THE AGED. (3 credits). A seminar dealing with social services for the aged. Topics will include: dilemmas of retirement, institutionalizing of the elderly, community care, separation and loss, role of the social worker with the elderly and their families.
Professor MacLean

407-464A INDUSTRIAL SOCIAL WORK. (3 credits). A seminar on social work practice in industrial settings. Analysis of conceptions of work; workrelated, personal and family problems, relationships between social agencies and the world of work, social service programs offered under industrial and trade union auspices.
Professor McGilly

407-465A SEMINAR IN SCHOOL SOCIAL SERVICES. (3 credits). The seminar will examine the interrelationships of the pupil's social environment in the culture of the school, the problems of teachers and principal and their resultant impact on the pupil's academic achievement. Existing models of social work intervention in schools will be discussed with special emphasis given to "Interprofessional Collaboration".
Professor Dalfen

407-467B SOCIAL WORK AND PUBLIC ISSUES. (3 credits). An examination of the process by which social problems are translated into public issues, the factors influencing various interest groups in taking positions on such issues and the reasons why some succeed more than others. Particular

attention will be paid to issues raised at the municipal and provincial level which have relevance for social work.
Staff

407-471B INDIVIDUAL SOCIAL WORK RESEARCH PROJECTS. (3 credits; Prerequisite: 407-270A,B). This course will provide an opportunity for interested students to conduct small-scale practical research projects, either individually or in small groups, with tutorial assistance from staff members and without the formal reporting requirements of the M.S.W. research project.
Professor Duder

407-472A SEMINAR ON FAMILY ASSESSMENT. (3 credits). An advanced seminar designed to integrate knowledge of human personality in social process. Emphasis will be upon the appraisal and assessment of patterns of reciprocity among members of disturbed and disorganized families. Preference will be given to students who have some field contact with families.
Professor Braverman

407-473A CASEWORK WITH INDIVIDUALS AND FAMILIES. (3 credits). Theory and practice of work with individuals and families under stress. Topics will include: categories of hazardous events; affective, behavioural and role disorganization; phases in the crisis cycle; techniques of crisis intervention and abatement.
Professor Katz

407-474B METHODS OF COMMUNITY DEVELOPMENT, SOCIAL ACTION. (3 credits). The aim of this course is to develop an understanding of the organizing process and to enrich the student's repertoire of direct organizing skills. Emphasis is on organizational entities, community power and conflict, organizing strategies and their application, in the context of current issues in urban community development.
Professor Torczyner

407-475A COMMUNITY ORGANIZATION. (3 credits). This seminar provides students with an understanding of planning theory and practice as it relates to community organizing and social service delivery. It focuses on 3 themes: 1) theories of planning and their applicability to social work practice, 2) the planning process (steps and process), 3) an examination of major planning issues in service delivery.
Professor Torczyner

407-476A SOCIAL WORK PRACTICE WITH GROUPS I. (3 credits). Theory and practice of work with groups. Focus will be on group development theory and the skills of the worker as he strengthens group potential for mutual aid. Children and adult groups in a range of settings will be examined.
Professors Rotholz and Hopmeyer

407-477B SOCIAL WORK PRACTICE WITH GROUPS II. (3 credits; Prerequisite: 407-476B). An advanced course in practice, with emphasis on comparative theories of groups.
Professors Rotholz and Hopmeyer

407-480L,D FIELD INSTRUCTION. (6 credits). Supervised educational experience in social work practice, integrating practice with theoretical knowledge characteristic of the selected field. Individual and group instruction. Pre-requisite: 407-456D.
Field Instructional Staff

407-481A SEMINAR ON SOCIAL WORK PRACTICE I. (3 credits). Principles of Social Work Practice in working with individuals, families, small groups and communities. Methods of practice will be analysed from a range of settings, drawing upon student field experience. For Special B.S.W. students only.
Professors Cooper and Steele

407-482B SEMINAR ON SOCIAL WORK PRACTICE II. (3 credits). A continuation of 481A. For Special B.S.W. students only.
Professors Werk, Magill and Urtnowski

407-483A SOCIAL WORK PRACTICE IN A MULTICULTURAL CONTEXT. (3 credits). This seminar is designed to prepare students from all backgrounds for working more comfortably and knowledgebly with our multicultural clientele. Content will include: the impact of formal and informal social policies and institutions on the welfare of cultural, ethnic and racial minorities; and the relationship between cultural norms and social work practice models. Experiential learning will provide opportunities for increased self-awareness.
Professor Christensen

407-484B SEMINAR IN COMMUNITY ORGANIZATION. (3 credits). This seminar examines issues and dilemmas which students encounter in community organization practice. The workshops provide a forum to analyse neighbourhood structures, organizations and systems which affect community lives. Particular attention will be directed toward the development of citizens' groups and coalitions, the analysis of power structures and planning with community associations for change.
Professor Torczyner

407-485A,B TUTORIAL IN SOCIAL WORK PRACTICE. (3 credits). An individual or small group tutorial in which students will work independently in conjunction with the instructor. The student will undertake a project related to the area of specialization. To be taken only with the consent of the Director.
Staff

407-486A,B TUTORIAL IN SOCIAL POLICY. (3 credits). An individual or small group tutorial in which students will work independently in con-

junction with the instructor. The student will undertake project related to the area of specialization. To be taken only with the consent of the Director.
Staff

407-487B FAMILY THERAPY SEMINAR. (3 credits). This course will focus mainly on interventive techniques. Approaches to families with special problems such as one-parent families, immigrant families, multiproblem families and families with a psychosomatically ill member will be discussed with a clinical focus. The aim is (1) for students to gain an understanding of how family members are shaped by, and help shape their environment and (2) to improve students' treatment skills in dealing with a wide spectrum of families. Prerequisite 472A.
Professor Braverman

407-488A SOCIAL WORK PRACTICE WITH CHILDREN. (3 credits). An overview of normal personality development and some of the common problems of childhood encountered in social work practice, with an introduction to practice theory and some specialized skills. Some of the problem areas to be considered are mother-infant bonding, privation, deprivation, separation difficulties, child abuse, the chronically ill child, the physically disabled child, inhibition, school phobia, truancy, oppositional behavior, hyperactivity etc. Preference will be given to students who have contact with children.
Professor Speirs

407-489B HUMAN SEXUALITY IN SOCIAL WORK PRACTICE. (3 credits). A seminar designed to provide students with an opportunity to develop beginning practice competence in dealing with problems related to human sexuality (abortion, family planning, homosexuality, etc.) Emphasis will be placed on helping students to incorporate a range of professional interventions and skills by use of case material, taped sessions and role-play. Students will be expected to share practice experiences. Open to U3 and Special B.S.W. students.
Professor Christensen

407-490A MAJOR LIFE EVENTS. (3 credits). Overview of the interaction between the major events of individuals lives and the significant situations in which they may be. A phenomenological approach will focus on the importance of the major events throughout a life span from the viewpoint of those involved. Review of significant research on life stress events and their implications for social work practice.
Professor MacLean

407-497A/L CLINICAL PRACTICE SEMINAR. (3 credits). A seminar to provide an opportunity to develop beginning practice competence with various population groups, e.g. physically and mentally handicapped, adolescents, multi-problem families, etc.
Staff

407-498B CLINICAL PRACTICE SEMINAR. (3 credits). A continuation of 497A/L.
Staff

407-499A/L WOMEN'S ISSUES IN SOCIAL WORK PRACTICE. (3 credits). Provides students with knowledge and awareness of issues related to women as providers and consumers of social services. Theoretical frameworks for analysis of social policy and of strategies for policy change. Through the study of women's experience in the world of family and work, students will be expected to formulate guidelines for providing social services to women.
Professor Urtnowski

COURSES OPEN TO UNDERGRADUATE AND GRADUATE STUDENTS

- **407-528A ACTIVITY GROUP METHODS.** (3 credits). In this class, play and socializing activities are studied: a) for their value as enjoyable and growth enhancing experiences, b) theoretically and practically as they apply to work with various types, sizes and styles of client groups, c) as a method of developing professional skills, relevant to facilitating personal and interpersonal growth in working with groups, d) as a means of helpling the students develop an awareness of their own effectiveness as participating group members or leaders.

407-530A SEMINAR ON SOCIAL PERSPECTIVES ON AGING I. (3 credits). Instructors and students from different disciplines (sociology, political science, economics, management, social work and others) will discuss issues of demography, age status and roles, attitudes, family and intergenerational relations, retirement, leisure, etc. Policies, provisions and services to seniors will be explored and evaluated. Selected senior citizens will participate in this Seminar.
Professors Marcus and MacLean

407-531B SEMINAR ON SOCIAL PERSPECTIVES ON AGING II. (3 credits). Instructors and students from disciplines such as biology, psychology, geriatrics, education, religious studies, social work and others will focus on certain aspects of aging, i.e. physiological, psychological, cultural, health and disease in old age, death and dying, etc. The provision of services and their impact on the recipients will be evaluated. Senior citizens will participate in the Seminar.
Professor Marcus and MacLean

407-532A/B SEMINAR IN INTERNATIONAL SOCIAL WELFARE. (3 credits). Discussion based upon intensive study and reports on problems in selected countries. Emphasis is placed on identifying major social problems, understanding the social forces bearing on those problems and con-

sidering appropriate professional approaches to aid in their solution.
Professor Woodsworth

407-533B SOCIAL WORK PRACTICE IN FORMAL ORGANIZATIONS. (3 credits; Prerequisite: 407-452A). An examination of the ways in which social workers as professionals deal with their organizational environment. Theory and researchon formal organizations, case material and the students' own experience will form the basis for discussion. Organizational "games" illustrative of the strategies used in such situations will be constructed and played out.
Staff

407-534B SOCIAL WORK PRACTICE WITH INVOLUNTARY CLIENTS. (3 credits). An examination of the issues and practice problems encountered by practitioners working with involuntary clients in settings such as courts, youth protection agencies and total institutions. Topics will include reaction of the client and worker to the "involuntary" situation, the ethics and efficacy of "coerced treatment" and practice interventions with involuntary clients. Students will be expected to draw on their own experience with these issues.
Professor Cooper

LAW COURSE OPEN TO SOCIAL WORK STUDENTS

The following course is open to third year social work students; students must apply to the Faculty of Law for permission to take this course.

490-003A LAW AND PSYCHIATRY. (B.C.L. & LL.B.) (3 credits). An examination of the roles of lawyers and psychiatrists in the handling of the mentally ill individual within the legal process. Detailed consideration will be given to the civil commitment process, the criminal commitment process, the insanity and "automatism" defences, the psychiatrist as expert witness, mental illness as a problem in such substantive areas as Wills and Estates, Family Law, Property Law. A number of sessions will be conducted jointly with members of the psychiatric profession.
Professor Sklar

SCIENCE FOR ARTS STUDENTS

These courses also appear in the appropriate departmental listing in the Faculty of Science section of this Announcement.

Consult departmental listings for more complete descriptions. Not all courses are available in any given year.

BIOLOGY

177-111A Principles of Organismal Biology. (3 credits).
177-112B Introduction to Cell and Molecular Biology. (3 credits).
177-246A Modern Biology and the Predicament of Man. (3 credits).
177-269A Social Issues in Biology. (3 credits).
177-328B Resource Biology. (3 credits).
177-346A Philosophie de la biologie. (3 credits).
177-347B History of Biology. (3 credits).
177-358A Canadian Flora. (3 credits).
177-364B Plants and Man. (3 credits).
177-373A Biometry. (3 credits).

CHEMISTRY

180-150A,B Chemistry in the Modern World. (3 credits).

COMPUTER SCIENCE

308-100A,B Introduction to Computing. (3 credits).

GEOLOGICAL SCIENCES

186-201A Introduction to Geology. (3 credits).
186-233B Historical Geology. (3 credits).
186-234A Introductory Paleontology. (3 credits).
186-242A Geomorphology. (3 credits).
186-243B Environmental Geology. (3 credits).

PHYSICS

198-200A IDEAS AND CONCEPTS OF MODERN PHYSICS I. (3 credits). A course for non-specialists, non-mathematical in character and requiring no specific pre-requisites in physics. The evolution of the concept of the electromagnetic field and the electromagnetic theory of light; the consequent formulation by Einstein of the special theory of relativity; the general theory; cosmology, space-time structure, and strong gravitational fields as manifested in collapsed objects such as pulsars, black holes and quasars.

198-201B IDEAS AND CONCEPTS OF MODERN PHYSICS II. (3 credits, prerequisite: 198-200A). The connection between microscopic and macroscopic physics; the laws of thermodynamics, the formulation of statistical mechanics and the concept of the "arrow of time", discussion of quantum concepts and quantum physics, the significance and consequences of the "uncertainty principle"; its manifestation in molecular structure, the properties of condensed matter and nuclear physics; the concept of anti-matter; notions of modern particle physics.

198-204A,B PLANETS, STARS AND GALAXIES. (3 credits; 3 hours lectures; 3 evening periods for star identification and use of telescopes). Apparent motion of the stars and planets; the solar system. Stellar structure and evolution – atoms,

nuclei and galaxies. Recent discoveries – pulsars, neutron stars, quasars and black holes – relativity. (Students are not allowed to take both 198-204B and 198-214A,B for credit).
Professor Crawford

198-205A,B/ 206A,B, Introduction to Selected Topics in Physics (1 credit each; Prerequisite: CEGEP Physics).
198-208A,B/ 209A,B, Introduction to Selected Topics in Physics. (1 credit each; no prerequisites).
198-224A Physics and Psychophysics of Music. (3 credits).
198-225B Musical Acoustics. (3 credits).

SOCIOLOGY (166)

Professors – RICHARD HAMILTON; MAURICE PINARD *(on leave);* WILLIAM WESTLEY
Associate Professors – ROGER KROHN; ULI LOCHER; PRUDENCE RAINS; GERTRUDE ROBINSON *(on leave second term);* MICHAEL SMITH; MALCOLM SPECTOR; DONALD VON ESCHEN *(Chairperson)*
Assistant Professors – CHARLES CAPPELL; ANTHONY MASI: MORTON WEINFELD
Visiting Assistant Professor – JAMES BURK

Stephen Leacock Building,
855 Sherbrooke St. West, Montreal, PQ, H3A 2T7.
General Information: Room 709, Telephone: 392-5178.

The study of Sociology, whether at the Majors or Honours level, offers the student an educational experience which is both intellectually rewarding and practically useful as a preparation for future career opportunities. Sociology – the scientific study of societies – provides the student with theoretical and analytical tools to better understand the complex social forces which affect our lives. Such sociological understanding may contribute to personal enrichment and to more effective participation as citizens of specific societies and the world. Undergraduate sociological training is also valuable preparation for advanced study in the social sciences, as well as for careers in the professions, management, education, law, medicine and health related areas, social work, and communications in both the public sector and private industry.

In the Spring of 1982, the Department of Sociology substantially revised its Major and Honours Programs, but these changes were not approved by all the necessary committees in time to be included in this year's course calendar. Students are urged to consult the Department (Leacock 710) for the description of the new programs which apply to all students working toward a B.A. in Sociology starting with the academic year 1982-83. The descriptions of programs contained below for degrees are valid only for those students already enrolled in one of the Sociology degree programs prior to the Fall, 1982. These latter students will have the choice of following either the old or revised programs.

MAJOR PROGRAM IN SOCIOLOGY

The Major program in Sociology is intended for students who do not wish to confine their studies to the sequence of courses required of Honours students.

While Statistics is not a requirement for Majors students, it is strongly recommended as an aid to understanding much of the literature. It is also required in most graduate or professional programs.

Required course work is as follows:

39 credits in Sociology, to include the Sociological Perspectives course, 166-210A,B.
18 credits chosen from one or two of:

Anthropology
Economics
Geography
History
Political Science
Psychology

Eighteen of the 39 Sociology credits must be taken at the 300 or 400 level. All required courses must be passed with a grade of C or better. Students wishing to be admitted to the program should consult an adviser on the Undergraduate Committee of the Department. Contact the Department Office – 392-5178.

THE HONOURS PROGRAM

The Honours program is designed to provide a focused, rigorous program in Sociology. It exposes the student to a more challenging undergraduate program, which better equips the student for any subsequent graduate education. An Honours degree is generally an asset for admissions to graduate programs in the social sciences and the professions, as well as with prospective employers. The Honours students are normally expected to enter the program in the first year (U-1) though admissions in later years is possible with departmental consent. Students are expected to take 12 credits in Sociology in their first year.

Requirements

Honours students must take at least 60 credits in Sociology. With the approval of the Honours Adviser, up to 15 of these 60 credits may be taken in

fields related to Sociology (provided that the courses taken in these fields are numbered 300 or above). Honours students must take Sociology 350 (Statistics), Sociology 361 (Introduction to Quantitative Analysis) and Sociology 451 (History of Sociological Theory). Twenty-four of the credits in Sociology must be in courses at the 300 level or higher. If they wish, Honours students may take up to two graduate seminars. Those students intending to do advanced study in sociology, are encouraged to take one or two graduate seminars.

In order to be allowed to remain in the program and to receive the Honours degree students must maintain a CGPA of 3.0, as well as a GPA of 3.0 in Sociology courses. In addition, no course with a grade below C will be credited towards the 60 credits required for the Honours degree. In the case of courses specified by the program (Statistics, Methods, History of Theory, etc.) a student receiving a grade below C may, with the permission of the Department, take a supplemental examination or repeat the course. In the case of a course being counted as one of the credits required by the program students receiving a grade below C have the additional option of substituting a new course in Sociology providing that their total grade point average in Sociology remains above 3.0.

First Class Honours in Sociology will be granted based on CGPA of 3.5 or above as well as GPA of 3.5 or above in Sociology courses.

JOINT HONOURS PROGRAMS

Joint Honours Programs exist with Anthropology, Jewish Studies, Economics, Political Science and History. A student taking such Joint Honours Programs must take at least 30 credits in Sociology. These courses must include the 3 required honours courses.

Course Descriptions

As this announcement is prepared early in the year, it is subject to change. We advise all students to check with the Department prior to registration. A final listing of course offerings will be made available in the Summer.

Students from outside the Department may take courses in the Department without having had the Sociological Perspectives course. While not a requirement, it is, nevertheless recommended. Normally three sections of this course are offered, two in the first term and one in the second. This is to permit flexibility in scheduling. They also reflect the somewhat different emphases of the professors teaching them. The course is required for Majors and Honours students.

- *Denotes not given in 1982/83.*

166-210A,B SOCIOLOGICAL PERSPECTIVES. (3 credits). A University level presentation of major theoretical perspectives and research methods in sociology. The linkages of theory and method in various substantive areas will be explored; this will include study of the family, community and urban life, religion, ethnicity, occupations and stratification, education, and social change. (Not open to students who have taken 166-212 or 214).
Professors Hamilton/Burk

OTHER COURSES

166-216A SOCIAL PSYCHOLOGY. (3 credits). The course will include studies of social interaction, socialization, exchange, norms and conformity, status and deference, role playing, personal identity, communication, and persuasion; the course will also include studies of the interaction of perceptual, cognitive, and emotional processes.
Professor Krohn

- **166-217A CANADIAN MASS COMMUNICATIONS.** (3 credits). An introductory course dealing with the history, structure and functions of the mass media in Canada and the way in which ownership patterns affect message content. The focus is comparative, stressing differences between the U.S. and Canada and policy interrelationships resulting from overflow programming. Enriched with modules. (Given in alternate years with 318).
Professor Robinson

- **166-219A THE SOCIOLOGY OF INNOVATION AND CULTURAL CHANGE.** (3 credits). The comparative study of the social process of innovation in specialized sub-cultures via the history of specific innovations, the relations among theoretical models, and the biographies of innovators. Comparisons are made among high sub-cultures – science, art, religion – and less elaborate practices, such as hunting and investigative journalism. Attention is paid to the interaction of emotion and cognition and to specialist roles and communities in their social contexts.
Professor Krohn

166-221A SOCIETY AND POLITICS IN THE UNITED STATES. (3 credits). Analysis of the class structure of the contemporary United States. Political attitudes and behaviour of elites, upper and lower middle classes, and the working class will be explored. The sources of stability and change will also be considered.
Professor Hamilton

166-222B URBAN SOCIOLOGY. (3 credits). Comparative analysis of the process of urbanization in Europe, North America and the Third World; effects of urbanization upon social institutions and individuals; Theories of urbanization and urbanism; the Canadian urban system; urban problems in comparative view.
Professor Locher

166-225B MEDICINE AND HEALTH IN MODERN SOCIETY. (3 credits). Introduction to a series of socio-medical problems and ways in which sociologically oriented analysis and research are being used to understand and deal with them. Emphasizing Canada and Québec, problems such as the following will be included: Poverty and Health; Mental Illness; Aging; Death and Dying; Professionalism; Health Service Organization.
Professor Lella

166-227A DEVIANCE. (3 credits). An introduction to the sociological study of deviance with an emphasis on what has been called the "societal reaction" or "interactionist" approach to deviance. The course focuses on the correctional and causal approach towards deviance, the limitations of that approach, and alternative ways to address the subject of deviance.
Professor Rains

- **166-228A POWER AND SOCIETY.** (3 credits). Study of the relations among and between political, economic, military, intellectual and religious elites. Sociological factors affecting the development of the ideologies of each elite. Power elite theories elite-mass relations.
Professor Von Eschen

- **166-230A CLASS, ETHNICITY, AND POLITICS.** (3 credits). Class and ethnic inequalities in Canadian society. Their determinants and consequences. The ethnically segmented nature of the Canadian and Québec social structure. Problems of loyalty. The impact of class and ethnicity in federal and Québec provincial politics.
Professor Pinard

166-233B CANADIAN SOCIETY. (3 credits). A sociological overview of Canadian society, including major historical themes, demographic development, social institutions, regionalism, stratification, and inequality. Students will be introduced to the economic and cultural dimensions of (English) Canadian nationalism. An introductory analysis of Québec society and contemporary French Canadian nationalism will also be presented.
Professor Weinfeld

166-234B POPULATION AND SOCIETY. (3 credits). An introduction to population studies and some techniques of demographic analysis. This course focuses on the relationship between demographic processes (mortality, fertility, migration, age-sex structure, etc.) and social structures and changes. An examination of the empirical findings of demographic research within the perspective of several alternative analytical theories of population, including the notion of the demographic transition. World patterns and selected country case studies will be explored, and Canadian population issues placed in perspective. Quantitative data and theoretical perspectives will also be related to the more qualitative issues of population policies and the surrounding political and economic controversies.
Professor Masi

166-235A TECHNOLOGY AND SOCIETY. (3 credits). An examination of the extent to which technological developments impose constraints on ways of arranging social relationships in bureaucratic organizations and in the wider society: the compatibility of current social structures with the effective utilization of technology.
Professor Smith

166-247B FAMILY AND MODERN SOCIETY. (3 credits). Progressive specialization of the family's social role; the family as a central institution for the reproduction and transformation of modern society. Alternative theories about how and why institutional arrangements within the family have changed and the consequences of these changes for social organization. The family's capacity to adapt to and help reproduce developing societal systems of property, elite recruitment, and moral education.
Professor Burk

166-250D SOCIAL PROBLEMS. (6 credits). The course examines contrasting theoretical approaches to social problems. Among the topics examined are: the trend toward medical hegemony over problem populations, the decline in the use of custodial institutions, controversies generated by minority groups, especially the women's movement, and the rise and fall of the problem of crime.
Professor Spector

- **166-254D SOCIAL CHANGE.** (6 credits). Sources of social change, from ancient to modern times. Why different societies evolve different state structures, forms of economic organization, and systems of class, ethnic, and racial stratification. The causes are sought in geographical factors, technological developments, diffusion, the internal dynamics of different modes of production, imperialism, war, and the social movements to which these factors give rise. Both past changes and probable future ones will be covered. (Not open to students who have taken 166-354D).
Professor Von Eschen

- **166-301B COMPARATIVE ETHNIC RELATIONS.** (3 credits). An examination of ethnic, (or linguistic, religious) relations in multicultural societies. An analysis of the unique characteristics of such societies (i.e. segregation and insulation, plural structure, ethnic inequalities, dual loyalties). Their impact on conflict. Effect of social change in such societies. Problems of conflict regulation. Countries to be considered include Canada, Belgium, the Netherlands, Switzerland, Spain, Austria, and the United Kingdom. (Not open to students who have taken 453B).
Professor Pinard

- **166-305B SOCIALIZATION.** (3 credits). The course will concern itself with the effects of early childhood experiences upon adult personality, as well as the more general processes whereby social roles and values are transmitted to the new members of a society. Specific topics will include social reinforcement theories, modeling theories, maternal deprivation, culture and personality studies, cognitive development and infantile sexuality. Special attention will be devoted to the processes of sexrole socialization.

- **166-307A SOCIAL AND POLITICAL MOVEMENTS.** (3 credits). General approaches to the study of collective behaviour and social movements. Comparative examination of competing perspectives on social movements and collective action. Confrontation of theories with empirical studies of social and political movements, especially Canadian ones.
Professor Pinard

- **166-309A SOCIOLOGY OF HEALTH AND ILLNESS.** (3 credits). Health and illness are examined as social rather than purely bio-medical phenomena. Topics include: studies of persons who are ill, the occupations and organizations which provide health care; poverty and health; inequalities in access to and use of health services; recent policies, ideologies, and problems in governmental attempts to reform the organization of health services. Each student carries out a modest field research project, based on direct contact with people in a medical setting.

166-310B SOCIOLOGY OF MENTAL DISORDER. (3 credits). This course will integrate data and theories on mental disorders into a sociological framework. Studies from the areas of transcultural psychiatry, psychiatric epidemiology, stress, labelling, mental health care delivery, the family, positive mental health and the "sick" society will be reviewed and analysed in the framework of sociological theories of stratification, organization and social psychology.

166-312B INDUSTRIAL SOCIOLOGY. (3 credits). This course will focus on the responses of both workers and managers to changes in the organization and character of industrial work, taking into account the larger social and economic contexts within which those responses take place.
Professor Smith

166-315A SOCIOLOGY OF RELIGION. (3 credits). The social determinants and consequences of religious commitment. Beliefs and practices in cross-cultural perspective. Classical theories of the social functions of religion including those of Marx, Weber and Durkheim. Religion and social class in modern society. Functional alternatives to religion. (Not open to students who have taken 166-315D).

166-316B THE PROFESSIONS AND OTHER PERSONAL SERVICE OCCUPATIONS. (3 credits). The course presents a framework for the analysis of the position of professions in industrialized societies. Topics included are: the distinctive characteristics of professions compared with other occupations; interactions with clients (consumers), the state and other employers; problems of control of professional behaviour and quality of work; the professions and power.

- **166-317B RESEARCH ON WOMEN IN THE MEDIA.** (3 credits). A course teaching research skills in mass communications. Research topics focus on women in the media professions and the portrayal of women and women's work in the media. Lectures provide background on women in the professions and the way in which the media select and describe social reality.
Professor Robinson

166-318A TELEVISION IN SOCIETY. (3 credits; Prerequisite: 166-217 Canadian Mass Communications). Television participates in the social communication process in several ways: as a surveyor of the environment, as a socializer, as a definer of "public" realities and as a forum of debate. Topics such as the implications of television reporting of political and international events, differences in French/English outlooks, and the portrayal of women will be explored. (Given in alternate years with 217).
Professor Robinson

166-321B WOMEN AND WORK. (3 credits). This course will focus on women's roles as workers within and outside the home. The socialization and preparation of women for adult work roles, their work as housewives, their labor force participation patterns, the rewards they receive within the labor force (e.g. income, status, job satisfaction), and forces which affect and change women's work role will be examined.

166-323B SOCIOLOGY OF EDUCATION. (3 credits). Three distinct topics will be developed for detailed analysis. First, the degree to which access to and performance in the educational system reinforces or modifies inherited social status. Second, a critique of social and psychological assumptions of the curricular and pedagogic "reforms" of contemporary education. Third, causes and possible remedies for the disjuncture between the supply and demand for highly educated labour. Canadian data and research will be cited where available. (Not open to students who have taken 166-428B).
Professor Weinfeld

166-325B SOCIOLOGY OF SCIENCE. (3 credits). Comparative studies of the sociology and history of the natural and social sciences. A survey of new literature on the internal patterns of scientific (formal and informal) communication and professional organization, and of the scientific and political responses to the newly (since World

War II) central place of science in national societies, including the current status of science policy issues in Canada, the U.S., and Britain.
Professor Krohn

• **166-326A POLITICAL SOCIOLOGY.** (3 credits). An examination of the social changes that underly the emergence of modern politics. An outline and empirical critique of the principal alternative models of political functioning in industrial societies.
Professor Hamilton

166-327A SOCIOLOGY OF THE JEWS IN NORTH AMERICA. (3 credits). This course will develop an understanding of contemporary North American Jewry using findings of sociology and other social sciences. Social, cultural, and political issues of concern to the Jewish community will be analyzed. The course will examine specific characteristics of Jewish life in Canada, and Québec in particular, in comparison to the American Jewish experience.
Professor Weinfeld

• **166-332D SOCIAL ASPECTS OF DEVELOPMENT IN THE THIRD WORLD.** (6 credits). Demographic, cultural, psychological, and structural obstacles to economic growth. Strategies of development, from community organization to revolution, and a comparison of their effectiveness. The transformation of social structure under the impact of industrialization, urbanization and "Westernization".
Professor Von Eschen

166-333A SOCIAL STRATIFICATION. (3 credits). The ways in which contemporary societies are hierarchically ordered in terms of institutions and the processes by which rewards and resources are produced and distributed. Alternative theoretical approaches are studied in an attempt to explain observed patterns in class structures. Topics include: inequalities in wealth and income, social mobility, and the role of the State. (Not open to students who have taken 166-223).
Professor Von Eschen

166-337A APPLIED SOCIOLOGY. (3 credits). Studies of planned social change in factories, schools, hospitals and communities. The use of sociological research techniques and theory in the evaluation of social innovations. Changes in organizations, government and private social interventions.
Profesor Westley

166-338A REACTIONS TO DEVIANCE. (3 credits). The course will focus on the nature and variety of agencies that currently exist for the control or treatment of persons designated as "deviant," and on the rise and conjectured fall of institutionalization as a response to deviance. An attempt will be made to develop Canadian materials bearing on these subjects. The course extends a line of argument developed in the course on Deviance (227) and will not therefore deal directly with the issue of what *is* deviant. (Not open to students who have taken 166-438).
Professor Rains

166-340A, 166-341B CURRENT PROBLEMS IN SOCIOLOGY. (3 credits each; Prerequisite: permission of instructor). This course is intended for students who are adequately prepared to undertake advanced work and have an explicit proposal to submit. A student taking majors may take no more than 6 credits throughout the three year program from the following: 166-340A/341B, 166-342A/343B, 166-440A/441B, 166-442A/443B. Open to U2 and U3 students only. An honours student may take 12 credits but not more than three credits per term during the last two years. A student wishing to take a greater number than those specified above must petition the Undergradute Committee for permission. It is the student's responsibility to obtain the instructor's written consent and to inform the Department prior to registration, Room 710.
Staff

166-342A, 166-343B INDEPENDENT READING AND RESEARCH. (3 credits each). See description above for 166-340A, 166-341B.

166-345A,B TOPICS IN SOCIOLOGY. (3 credits). Topics to vary from year to year.
Staff

166-348A THE SOCIOLOGY OF LAW. (3 credits). The premise that law is a social product is developed in this course. Different approaches to jurisprudence are considered and evaluated. Specific studies of legal systems and their development are compared. While the course provides a broad introduction to the study of law and society, the focus will be on the modern institutions of western legal systems such as the legal profession and its associations, the courts, the state, and how the functions are mobilized by these agencies.
Professor Cappell

166-350A ELEMENTARY STATISTICS IN SOCIOLOGY AND ANTHROPOLOGY. (3 credits; Open to students who have not taken Psychology 204-204A,B, 204-305A,B, or Economics 154-317D).The basic concepts and techniques of statistical analysis applied in sociological and anthropological research problems. Topics include: frequency distributions, measures of central tendency and variation, simple correlation methods, sampling, tests of significance and non-parametric statistics.
Professor Masi

• **166-353A SOCIAL CONFLICT.** (3 credits). The dynamics of conflict in society. Processes in the initiation and development of conflicts. Types of conflicts. In-group conflicts and conflicts with outgroups. The impact on existing structures. Limiting factors in conflict situations. The role of

the agencies of social control.
Professor Von Eschen

166-361B INTRODUCTION TO QUANTITATIVE ANALYSIS. (3 credits; Prerequisite: 350 Elementary Statistics in Sociology and Anthropology). This course introduces the student to a variety of quantitative data gathering and analyzing methods. Topics include: experimental and quasi-experimental design, principles of measurement (reliability, validity, and replication), stages of conducting a survey (sampling, interviewing, preparing data for analysis), alternative data sources, data analysis and interpretation. Students will be expected to participate in and report on a research project.
Professor Cappell

- **166-404B SOCIAL INTERACTION.** (3 credits). The study of social interaction in everyday life from the point of view of symbolic interaction. The course will examine the nature of interaction, the building of identities and careers, the growth of sub-cultures, the nature of co-operative activity, embarrassment, face work, informal social control, and public life.

- **166-405B SOCIAL CHANGE IN THE CARIBBEAN.** (3 credits). Similarities and differences in the development of Caribbean societies. The heritage of plantation economies. Social and economic implications of contrasting political systems. Religion and folklore in modernizing societies. Internal migration and emigration. Caribbean communities abroad.
Professor Locher

- **166-410A PERSONAL SERVICE ORGANIZATIONS.** (3 credits). This course examines organizations to which people come or are sent with problems they are unwilling or unable to solve for themselves. The central concern is with the inherent characteristics and dilemmas of these organizations in comparison with those which process inanimate rather than human material. Organizations providing health services receive most attention, but educational, welfare, and correctional organizations are included.

166-415B SOCIETY AND POLITICS OF GERMANY. (3 credits). Analysis of three regimes in Germany: the Weimar republic, the Hitler dictatorship, and the Bonn Republic. Topics to be considered include stratification, political parties, educational and religious institutions as well as social movements and institutional change.
Professor Hamilton

- **166-419B ALIENATION.** (3 credits). There is a substantial body of literature within the social sciences that asserts that the way in which work and the labour market have come to be organized has a variety of deleterious effects on individual psychology and behaviour. This course will critically review the theoretic and empirical literature dealing with this problem.

166-420A INTRODUCTION TO FORMAL ORGANIZATIONS. (3 credits). An introduction to the major concepts used in the description and analysis of complex organizations such as business firms, hospitals, and schools. Students will learn to use different theories of organization to analyze concrete organization and to understand the applicability of each type of theory for different kinds of organization. (Not open to students who have taken 166-420D).
Professor Burk

- **166-421B THE ORGANIZATION AND THE PERSON.** (3 credits). A critical analysis of the major theories of organization and of the works of the major theorists. Particular attention will be given to the linkage between theories dealing with different levels of organization, such as the person, the plant, and the larger system. The course will include a section on the strains which appear in organization and the kinds of change techniques currently being advocaqted. (Not open to students who have taken 166-420D).

166-424A NETWORKS AND SOCIAL STRUCTURES. (3 credits). The study of relations and networks is introduced. Part of the course will be at a formal level, introducing the concepts and techniques of network analysis. Since the techniques are quite general, a variety of substantive issues will be explored, such as interlocking directorates, social relationships among individuals in heterogeneous communities and organizations, and relations among elites. Students will be required to design an enquiry into one of these substantive domains.
Professor Cappell

- **166-435B SOCIOLOGY OF POPULAR CULTURE.** (3 credits). A seminar exploring the nature of popular culture, tracing historical beginnings and contemporary changes in film, TV, comics, magazines, and rock music content. Primary emphasis is placed on developing theoretical perspectives and methodologies for analysing genres and themes, and for making distinctions between so-called folk and popular art. (Not open to students who have taken 166-535B).
Professor Robinson

166-440A, 166-441B CURRENT PROBLEMS IN SOCIOLOGY. (3 credits each). See description for 166-340A, 166-341B.
Staff

166-442A, 166-443B INDEPENDENT READING AND RESEARCH. (3 credits each). See description for 166-340A, 166-341B.
Staff

166-444B: THE SOCIOLOGY OF THE LABOUR FORCE. (3 credits; Prerequisite: 166-235 Technology and Society or 166-333 Social Stratification or 166-312 Industrial Sociology or 154-306 Labour Economics and Institutions or permission of the instructor). Sociological

theories and empirical research on labour force functioning and the labour market. Concepts of the labour force-labour market are explored from the perspective of several competing theoretical frameworks: neo-classical economies, Marxian analysis, and dual-segmented labour market approaches. Topics include: education and the job market, occupational structures, income inequalities, the geographic mobility and the socio-political consequences of work structures. Canadian materials will be placed in comparative perspective, both historically and cross-nationally. (Not open to students who have taken 166-320).
Professor Masi

- **166-447A CRIME.** (3 credits). The interactionist perspective is used to examine the meaning and social organization of crime. Topics include crime as work, crime as play or immorality, organized crime, crime as the object of controversy. The perspectives of criminals, victims, law enforcement officers, the media and the public will be examined.

- **166-448B ETHNOMETHODOLOGY.** (3 credits). The course will be directed to understanding and coming to terms with this new theoretical development in sociology which considers the methods and practices used by persons to interpret, construct and make sense of their world – to generate social reality.

166-451B THE HISTORY OF SOCIOLOGICAL THEORY. (3 credits). Social and political debates of the 19th and 20th Centuries seen in their social contexts and as the background of current theoretic concerns and developments. Emphasis on Smith, St. Simon, Marx, Durkheim, Weber, American functionalists, and the "Chicago School", and the social and theoretic traditions they originated and represent.
Professor Krohn

166-463B FIELD METHODS IN SOCIOLOGY. (3 credits). Participant observation; interviewing and the nature of questions and questioning; the relative advantages and disadvantages of these as methods of generating data and theory; ethical questions.
Professor Rains

- **166-465B SURVEY ANALYSIS.** (3 credits; Prerequisite: 166-361 Introduction to Quantitative Analysis). The course involves the analysis of completed surveys. Students will be expected to write an original research paper based on survey materials.

166-466A LABOUR RELATIONS IN BRITAIN. (3 credits; Prerequisite: 166-235 Technology and Society or 166-312 Industrial Sociology or permission of the instructor; maximum enrollment of 25 students). An examination of labour relations institutions and their social bases in Britain. The British case as a vehicle for testing some of the attempts to construct general theories of labour relations in capitalist societies.
Professor Smith

166-504A QUANTITATIVE METHODS OF SOCIAL RESEARCH I. (3 credits; Prerequisites: 350 Elementary Statistics in Sociology and Anthropology and 361 Introduction to Quantitative Analysis or equivalents). This course covers several techniques for the analysis of quantitative information, especially as contained in large, *survey-type*, data sets, and introduces the student to the use of computer programmes such as SPSS and SAS. Topics include: cross tabulations with an emphasis on multi-dimensional tables, multiple correlation and regression, and, a discussion on the relationship between individual and aggregate level statistical analyses, with special reference to demographic techniques.
Professor Masi

166-505B QUANTITATIVE METHODS OF SOCIAL RESEARCH II. (3 credits; Prerequisite: 504 Quantitative Methods of Social Research I). Methods appropriate for the analysis of data typically used in quantitative inquiries and theory construction are explained. The analysis of categorical data using log-linear techniques is emphasized; the general linear model is introduced; exploratory techniques such as cluster analysis are discussed.
Professor Cappell

- **166-510B SEMINAR IN SOCIAL STRATIFICATION.** (3 credits; Prerequisites: 166-223 Social Stratification and 166-350 Elementary Statistics in Sociology and Anthropology or equivalents.) This course evaluates critically recent theoretical and empirical developments in the field of social stratification and inequality. In addition to a review of the dominant approaches to the study of social class, special attention will be given to the anomalous findings on heterogeneity in labour markets and the labour process, status attainment processes, and the socio-political and industrial attitudes of the working class. Students will prepare quantitative analysis of Canadian survey material as well as critical qualitative reviews.
Professor Masi

- **166-515B THE SOCIOLOGY OF MEDICINE.** (3 credits; Prerequisite: Sociology, 166-309 or equivalent). A seminar which covers the sociology of health and illness and gives an opportunity to read in areas of special interest, such as: the sociology of illness, occupations involved in the provision of health services, organizational settings of health care, the politics of change in national health service systems, and contemporary ethical issues in medical care and research.

166-520A MIGRATION AND IMMIGRANT GROUPS.

(3 credits; Prerequisite: 15 credits in the Social Sciences). This course will review the major demographic, economic and sociological theories of internal and international migration. The main emphasis will be on empirical research on migration and immigrant groups. Students will be expected to participate in research projects on immigrant groups in the city of Montreal.
Professor Locher

166-550A THE SOCIOLOGY OF DEVELOPING SOCIETIES. (3 credits). A theoretical and empirical comparison of alternative explanations of underdevelopment in the Third World. Particular attention will be given to the impact of structural factors such as systems of social stratification, structures of power, relations of domination and subordination between nations, and the like. Students will be expected to write and deliver a research paper, and to participate extensively in class discussion.
Professor Von Eschen

166-552A CURRENT SOCIOLOGICAL THEORY. (3 credits; Prerequisite: 166-451, The History of Sociological Theory). Examination of some major areas of current sociological work within a sociology of knowledge and science framework, focusing on apparent "growth edges" in the discipline; an attempt to relate this current work to its background theoretic traditions, to illustrate it by present work in this Department, and to relate it to the students' own work.
Professor Krohn

Graduate Seminars

NOTE: The following graduate seminars are open to final year Honours students with adequate preparation.

- **166-618A SEMINAR: THE SOCIOLOGY OF WORK.**
- **166-619B SEMINAR: COMPARATIVE ETHNIC POLITICS.**
  Professor Pinard
- **166-620B SEMINAR: SOCIAL MOVEMENTS.**
- **166-622A SEMINAR: PROBLEMS IN MASS COMMUNICATIONS.**
- **166-623A SEMINAR: CANADIAN CULTURAL AND COMMUNICATIONS POLICY.**
  Professor Robinson
- **166-625B SEMINAR: INDUSTRIAL SOCIOLOGY: THE ORGANIZATION OF PRODUCTION**
- **166-626B SEMINAR: INDUSTRIAL SOCIOLOGY: UNIONIZATION AND STRIKES.**

166-627B SEMINAR: POLITICAL SOCIOLOGY.
Professor Hamilton

166-629A SEMINAR: ETHNICITY AND PUBLIC POLICY.
Professor Weinfeld

- **166-630B SEMINAR: MIGRATION AND MULTICULTURALISM IN QUÉBEC.**
- **166-633A SEMINAR: THE STUDY OF COMPLEX ORGANIZATIONS.**
  Professor Westley
- **166-635B SEMINAR: MULTI-LEVEL ANALYSIS.**
- **166-638A SEMINAR: THE DEMOGRAPHIC TRANSITION AND SOCIAL CHANGE.**

166-640B SEMINAR: QUALITATIVE METHODS OF SOCIAL RESEARCH.
Professor Rains

166-650A SEMINAR: SOCIO-TECHNICAL ANALYSIS AND ORGANIZATIONAL CHANGE.
Professor Westley

166-655A SEMINAR: THE ROLE OF THE MEDIA IN NATIONAL DEVELOPMENT AND SOCIAL CHANGE.
Professor Robinson

- **166-661A SEMINAR: SOCIOLOGY OF KNOWLEDGE.**
  Professor Krohn

166-670B SEMINAR: COMPARATIVE URBANIZATION IN THE THIRD WORLD
Professor Locher

- **166-671A SEMINAR: DEVIANCE AND SOCIAL CONTROL.**

166-672B SEMINAR: SOCIAL CHANGE.
Professor Von Eschen

- **166-680D SEMINAR: APPLIED SOCIOLOGY & ALTERNATIVE ORGANIZATIONS.**
- **166-681D SEMINAR: SOCIAL MOVEMENTS**

166-682A SEMINAR: TOPICS IN ECONOMY AND SOCIETY.
Professor Burk

166-685D SPECIAL SEMINAR: SOCIAL PROBLEMS.
Professors Rains and Spector

166-720A,B READING IN SOCIAL THEORY.
Staff

166-730A,B READING AND RESEARCH.
Staff

WOMEN'S STUDIES

Women's Studies has several goals: to raise the consciouness of students about sexism in the curriculum and in the wider society; to compensate for the under-representation of women in the curriculum; to encourage research, and to recover the lost or neglected history and culture of women.

Women's Studies is a minor program consisting of 24 credits of which at least 12 credits

must be taken from courses designated as "core" in the list of approved courses. An interdisciplinary seminar is required in the U3 year. All courses must be passed with a grade of "C" or better.

For further information, please consult one of the following:

Professor Rains, Sociology Department,
Room 732, Leacock Building
(392-5177)

Professor Tomaszuk, Classics Department,
Room 524, Leacock Building
(392-5219)

Professor Gillet, Faculty of Education
Room 305, Duggan House
(392-2833)

Courses

NOTE 1: *Core courses are designated by an asterisk (*).*

NOTE 2: *Consult departmental listings for more complete descriptions. Not all courses are available in any given year.*

ANTHROPOLOGY

*151-224B Women in Cross-Cultural Perspective (3 credits).
151-227A Health and Illness in Cross-Cultural Perspective (3 credits).
151-316B Anthropology of Complex Societies (3 credits).
151-437B Anthropological Approaches to Cultural Change (3 credits).

BIOLOGY

177-269A Social Issues in Biology (3 credits).

CLASSICS

*114-302A Women in Greek Drama (3 credits).
114-307A Introduction to Roman Comedy (3 credits).

ECONOMICS

154-306D Labour Economics and Institutions (6 credits).
154-427A Population Analysis in Development Economies (3 credits).

EDUCATION

*411-409A Women and Education (3 credits).
*411-410B Women in Higher Education (3 credits).

ENGLISH

110-208A English Novel in the 19th Century (3 credits).
110-209B English Novel in the 19th Century (3 credits).
110-228A Canadian Poetry in English (3 credits).
110-229B Canadian Prose in English (3 credits).
*110-443A Contemporary Women's Fiction(3 credits).

FRENCH LANGUAGE AND LITERATURE

*125-479B La littérature féminine. (3 crédits).

GERMAN

129-365A or B Media Studies in German (3 credits).

HISTORY

101-310D Topics in Latin American History (6 credits).
101-314D Tudor and Stuart England (6 credits).
101-325D Western Europe from the Renaissance to the 18th Century (6 credits).
101-333A Themes in Canadian Social and Economic History (3 credits).
101-341A Themes in U.S. Social and Economic History, 1800-1877 (3 credits).
101-351B Themes in U.S. Social & Economic History 1877-1960 (3 credits).
101-359B Medicine, Politics, and Society since 1789 (3 credits).
101-362B The Canadian West 1870-1970 (3 credits).
101-363D Contemporary Canada 1890-1970 (6 credits).
101-380D Medieval Life and Institutions (6 credits).
101-401A Topics in Medieval Culture and Society (3 credits).
101-414D Great Britain from the Late Victorian Period (6 credits).

LAW

NOTE: Students must apply to the Faculty of Law for permission to take these courses.

475-273A Family Law I (3 credits).
485-472A Family Law IA (3 credits).
491-404A Public International Law IV (2 credits).
491-405B Public International Law V (2 credits).

MANAGEMENT

*278-389A,B Women and Men – a Managerial Perspective (3 credits).
279-501A Human Resources in Industrial Society.

PSYCHOLOGY

204-330A Introduction to Social Psychology (3 credits).
204-331A Selected Topics in Social Psychology (3 credits).
204-333B Personality and Social Psychology (3 credits).

*204-339A Women and Men: The Psychology of Sex Differences (3 credits).
204-414A Social Development (3 credits).
*204-418A Psychological Bases of Sexual Behaviour (3 credits).
204-430A,B Constitutional Factors in Behaviour (3 credits).

RELIGIOUS STUDIES

*260-338A Perspectives on Women in the Christian Tradition. (3 credits).
*260-339B Hindu and Buddist Images of the Feminine. (3 credits).

SOCIAL WORK

407-499B Women's Issues in Social Work Practice (3 credits).

SOCIOLOGY

166-217A Canadian Mass Communications (3 credits).
166-227A Deviance (3 credits).
*166-247B Family and the Modern Society (3 credits).
166-250D Social Problems (6 credits).
166-317B Research on Women in the Media (3 credits).
166-318A Television in Society (3 credits).
*166-321A Women and Work
166-404B Social Interaction (3 credits).
166-463B Field Methods in Sociology (3 credits).

INTERDISCIPLINARY SEMINAR IN WOMEN'S STUDIES

411-499D Research Seminar on Women's Studies (6 credits; open to U3 students following the Minor in Women's Studies and to others with permission of instructor).

A research seminar on selected topics of interest to students in the Minor in Women's Studies. Examples of topics are the status of women in school, work and society, gender identity, and the roles of women in cross-cultural perspective. As part of the course requirements, students will prepare a research paper under the supervision of one or more members of staff.

Co-ordinator: Dr. Prudence Rains, Faculty of Arts (392-5177).

3 FACULTY OF SCIENCE

ADMINISTRATIVE OFFICERS

University

DAVID L. JOHNSTON, A.B.(Harv.), L.L.B. (Cantab. & Queen's), L.L.D. (L.S.U.C.)
Principal and Vice-Chancellor

S.O. FREEDMAN, B.Sc., M.D., C.M. (McG.), F.R.C.P.(C), F.A.C.P., F.R.S.C.
Vice-Principal (Academic)

JOHN ARMOUR, AACCA **Vice-Principal (Administration and Finance)**

E.J. STANSBURY, M.A., Ph.D.(Tor.) **Vice-Principal (Planning and Academic Services)**

G.A. MACLACHLAN, B.Sc., M.A. (Sask.), Ph.D. (Man.) **Vice-Principal (Research)**

L.E. LLOYD, B.Sc., M.Sc., Ph.D.(McG.)
Vice-Principal (Macdonald Campus)

COLIN M. McDOUGALL, D.S.O., B.A.(McG.)
Secretary-General

MICHAEL HERSCHORN, M.A., Ph.D.(McG.)
Dean of Students

JEAN-PAUL SCHULLER, B.A.(Ott.) **Registrar**

PEGGY SHEPPARD, B.Ed.(McG.), B.A.(Sir G. Wms.) **Admissions Office, Director**

ALTA ABRAMOWITZ, B.A., M.Ed.(McG.)
Information and Liaison Office, Director

MARIANNE F. SCOTT, B.A., B.L.S.(McG.)
University Libraries, Director

Faculty

SVENN ORVIG, cand. mag.(Oslo), M.Sc., Ph.D. (McG.), F.R.S.C. **Dean of the Faculty of Science**

P.G. FARRELL, B.Sc., Ph.D.(Exe.)
Associate Dean of the Faculty of Science

KYRA EMO DAVIS, B.Sc.(McG.)
Coordinator, Academic Affairs and Secretary of the Faculty of Science

JOAN HAGERMAN, B.A.(Bishop's) **Recorder**

ANGELINE LUCAS **Senior Adviser**

LILA WILLIS **Senior Adviser**

PROGRAM INFORMATION

The Faculty of Science offers the Bachelor of Science degree (B.Sc.).

The Faculty of Science and the Faculty of Arts offer similar patterns of study towards their degrees. A student may choose among the Faculty programs, Major programs or Honours programs as described in the introductory section of this Announcement common to both Faculties. (See Faculty Regulations).

DEPARTMENTAL ADVISORY OFFICES

Anatomy, Strathcona Anatomy and Dentistry Building, Rm. 148
Biochemistry, McIntyre Medical Sciences Building, Rm. 802
Biology, Stewart Biology Building, Rm. W4/8a
Chemistry, Otto Maass Chemistry Building, Rm. 125A
Computer Science, Burnside Hall, Rm. 945
Crystallography, Frank Dawson Adams Building, Rm. 337
Geography, Burnside Hall, Rm. 513
Geological Sciences, Frank Dawson Adams Building, Rm. 238
Mathematics, Burnside Hall, Rm. 1005
Meteorology, Burnside Hall, Rm. 720
Microbiology and Immunology, Lyman Duff Medical Sciences Building, Rm. 511
Physics, Rutherford Physics Building, Rm. 108
Physiology, McIntyre Medical Sciences Building, Rm. 1135
Psychology, Stewart Biology Building, Rm.N7/28

ANATOMICAL SCIENCES

Anatomy 504-214A, 504-261A, 504-321A, 504-362B and one of the following: 504-322B, 504-363A, 504-364B, 504-365A, 504-381B. Chemistry 180-212A,B, 180-222A,B, if not taken previously. Biology 177-200A and 201B (or 201D), 177-205D, 177-206D. Physiology 552-211D. Plus 12 credits in biologically oriented courses selected in consultation with an adviser.

53 credits: consult the Department of Anatomy for an Adviser.

For returning U3 students, see old program below:

Biology 177-200A, 177-201B (or 201D), 177-205D, 177-206D; Mathematics 189-231A,B; Biology 177-301A,B, 177-303A; one of the following: Biology 177-309B, 177-393A, Mathematics 189-232B, Psychology 204-204A,B; (27 credits); Chemistry 180-212A,B; 180-222A,B; Anatomy 504-261A (Histology); 504-311A (Musculo-Skeletal); 504-312B (Visceral); 504-321A (Neuroanatomy); (21 credits); plus 12 credits from upper year Biology, Biochemistry, Physiology, and Microbiology and Immunology courses. (60 credits).

BIOCHEMISTRY

U1: (31 credits) Biology 177-200A and 201B (or 201D); Chemistry 180-204A,B 180-214B, 180-222A,B Mathematics 189-231A,B and one of the following: Biology 177-205D or Physiology 552-211D, and 6 additional

credits of electives chosen in consultation with the Adviser.

U2: (30 credits) Biology 177-301A,B, 177-302A,B; Biochemistry 507-311A, 507-312B; Chemistry 180-302A,B and one of the following: Biology 177-373A, Mathematics 189-232B, Computer Science 308-200A,B or Psychology 204-204A,B and 12 additional credits of electives chosen in consultation with the Adviser

U3: (30 credits) 3 credits must be chosen from List A and 9 credits from List A and/or List B.

List A Biochemistry 507-404B, 507-450A, 507-454A, 507-455B or 507-456B.

List B Chemistry 180-257D, 180-313A, 180-352B, 180-362A,B, 180-382A, 180-402B, 180-411A, 180-472B; Anatomy 504-261A, Biology 177-205D, 177-303A, 177-310B, 177-311B, 177-314A; Microbiology 528-314B; Physiology 552-211D; Pharmacology 549-461D.

An additional 18 credits from elective courses must be chosen in consultation with the Adviser.

55 credits: consult the Department of Biochemistry for an Adviser.

BIOGEOGRAPHY

Biology 177-205D*, 177-308B, 177-429B, 177-433D; Geography 183-201A,B*, 202A*, 203D*, 214A* or 236A* or 300B, 271A* or 272B*, 302D, 305A, 306B or 308A, 322B, 324B, 450A, 451B.

*Courses that should be taken in U1.

57 credits: consult the Department of Geography for an Adviser.

BIOLOGY

Biology 177-200A and 201B (or 201D), 177-205D, 177-202B (or -274A), 177-206D; 18 credits Biology courses (which can, at most, include 3 credits of Independent Study courses and 3 credits only of general interest courses not listed in Biology Major options); 18 credits science courses.

54 credits: consult the Department of Biology for an Adviser.

CHEMISTRY

Chemistry 180-212A,B*, 222A,B* or equivalent, 180-204A or 213A,B, 214B or 345A, 201A, 257D, 301B, 255A,B or 313A, 387D, 302A,B; Mathematics 189-222A,B, 223A,B, 315A,B; Physics 198-241A,B, 242A,B; Computer Science 308-200A,B; nine additional credits from any of the following: Chemistry 180-331A, 352B, 363A,B, 382A, 355B, 392A,B,D, 393A,B and any 400 level courses in chemistry for which the prerequisites are satisfied.

The program consists of 48 prescribed credits to which an additional 9 credits are added through the optional courses (57 total credits).

***NOTE:** If the CEGEP equivalent of any of these courses has already been successfully completed, a more advanced course in the same discipline must be added to the program.

CHEMISTRY, BIOANALYTICAL OR GEOANALYTICAL

Common Chemistry Courses: Chemistry 180-204A,B or 213A,B, 214B or 345A, 222A,B, 257D, 255A,B or 313A, 302A,B, 363A,B, 393A,B, 387D, 457B.

To complete Bioanalytical Chemistry: Biology 177-200A, 201B, 301A,B, 302A,B, 309A; Mathematics 189-231A,B.

To complete Geoanalytical Chemistry: Mathematics 189-245A,B, 323A,B, 324A,B; Physics 198-241A,B, 242A,B; Computer Science 308-200A,B; Geology 186-210A, 211B, 501A. One additional Geology Course.

55 – 58 credits: consult the Department of Chemistry for an Adviser.

CHEMISTRY AND BIOLOGICAL SCIENCES

Chemistry 180-222A,B, 204A or 213A,B, 214B or 345A, 257D, 302A,B, 352B, 362A,B, 382A; Biology 177-200A and 201B (or 201D), 205D, 301A,B; Mathematics 189-231A,B; Physics 198-241A,B, 242A,B; Physiology 552-211D; Computer Science 308-200A,B. Students lacking Chemistry 180-212A,B may take this program if they include this course in addition to those listed.

52-56 credits: consult the Department of Chemistry for an Adviser.

CHEMISTRY, INORGANIC / ANALYTICAL

Chemistry 180-204A,B or 213A,B, 212A,B, 214B or 345A, 222A,B, 201A, 255A,B or 313A, 257D, 301B, 307B, 411A; Geology 186-210A, 211A, Mathematics 189-222A,B, 315A,B; Physics 198-241A,B, 242A,B; plus 6 approved credits.

59 credits: consult the Department of Chemistry for an Adviser.

CHEMISTRY RADIOANALYTICAL

Chemistry 180-201A, 204A,B or 213A,B, 212A,B, 214B or 345A, 222A,B, 255A,B, or 313A, 257D, 301B, 363A,B, 393A,B, 387D, 411A, 457B; Mathematics 189-245A,B, 323A,B, 324A,B; Physics 198-241A,B, 242A,B, 337B; Computer Science 308-200A,B.

62 credits: consult the Department of Chemistry for an Adviser.

CLIMATOLOGY

Computer Science 308-200A,B; Geography 183-203D*, -321B, 322A, -324B, -422B, -523B; Mathematics 189-222A,B*, -323A,B, -314A,B, -315A,B; Meteorology 195-210A*, -211B*, -320A, -410A; Physics 198-251A, -253B.

*Courses that should be taken in U1.

54 credits: consult the Department of Geography for an Adviser.

DYNAMICS OF THE OCEANS AND ATMOSPHERE

Mathematics 189-222A,B, 189-223A, 189-314A,B, 189-315A,B, 189-319B, 189-316B, 189-317A,B, 189-555A; Meteorology 195-210A, 195-211B, 195-410A, 195-411B, 195-652A, 195-662B; Physics 198-251A,B, -253B, -281A,B, -283B, -309A, -319B.

56 credits: consult the Department of Meteorology for an Adviser.

EARTH PHYSICS – A

Computer Science 308-200A,B; Geology 186-203B, -303A, -220B; Mining and Applied Geophysics 306-230B, six further credits in approved courses in Geology; Mathematics 189-222A,B, -223A,B, -314A,B, -315A,B, -319B; Physics 198-241A,B, -242A,B, -251A, -253B, -281A, -283B, -328A, -342B, -434B.

59 credits: Consult the Department of Physics for an Adviser.

EARTH PHYSICS – B

Computer Science 308-200A,B; Geography 183-271A, 183-272B; Geology 186-220B; Mathematics 189-222A,B, 189-223A, 189-314A,B, 189-323A,B; Meteorology 195-210A, 195-211B, 195-320A, 195-321B, 195-510A, 195-511B, 195-653D; Physics 198-241A,B, 198-242A,B, 198-253B, 198-283B, 198-309A.

57 credits: consult the Department of Meteorology for an Adviser.

GEOMORPHOLOGY

Geography 183-271A*, -272B* or Geology 186-242A, -431B; Geology 186-233B; Geography 183-325A, -453A; Geography 183-308A or Geology 186-535A and 186-536B; Geography 183-201A,B, 202A, 305A, 322A, 327B, 451B, 523B; Geology 186-210A*, -310A, -311B, -312B, -446A.

*Courses that should be taken in U1.

57 credits: consult the Department of Geography or the Department of Geological Sciences for an Adviser.

HYDROLOGY

Computer Science 308-200A,B; Engineering 303-207A,B; Geography 183-271A, -272B, -305A, -201A,B or -308A, -321A, -322B, -327B, -523A; Geology 186-243B, -449B; Mathematics 189-222A,B*; -314A,B*, -315A,B*, -323A,B, -324A,B; Physics 198-251A, -253B.

*Courses that should be taken in U1.

55 credits: consult the Department of Geography for an Adviser.

MARINE GEOLOGY

Chemistry 180-201A, 180-301B, 180-213A,B; Geology 186-210A, 186-203B, 186-303A, 186-233B, 186-312B, 186-220B, 186-310A, 183-311B, 186-347B, 186-442A, 186-444B; Oceanography 395-697B; Mathematics 189-222A,B; Physics 198-253B, 198-309A.

58 credits: consult the Department of Geological Sciences for an Adviser.

MATHEMATICS AND BIOLOGY

Mathematics 189-221A,B, 222A,B, 223A,B, 315A,B, 317A,B, 319B, 232B, 324A,B, 327B; Computer Science 308-200A,B; Biology 177-200A and 201B (or 201D), 205D, 206D, 301A,B, 303A, 308B, 309A.

60 credits; consult the Department of Mathematics for an Adviser.

MATHEMATICS AND CHEMISTRY

Chemistry 180-212A,B, 213A,B, 255A,B, or 313A, 345A, 355B, nine additional credits in Chemistry; three or six credits in electronics; Computer Science 308-200A,B; Mathematics 189-222A,B, 223A,B, 314A,B, 315A,B, 317A,B, 319B, 323A,B, 324A,B.

55-58 credits: consult the Department of Chemistry for an Adviser.

MATHEMATICS AND COMPUTER SCIENCE

Mathematics 189-222A,B, 223A,B, 245A,B, 315A,B, 317A,B, 318A,B, 323A,B, 324A,B, 327A,B, 328B, Computer Science: 308-202, 273, 302, 317 plus 9 credits from any of the following Computer Science courses: 308-230, 305, 310, 400, 405, 415, 420, 421, 424, 425, 530, 540, 566, 567, 573, plus 6 credits from Mathematics or Computer Science at the 300 level or above, with the consent of the Adviser.

54 credits: consult the Mathematics Department for an Adviser.

MATHEMATICS, CHEMISTRY AND PHYSICS

Chemistry 180-204A,B or 213A,B, 214A,B or 345A, 212A,B, 255A,B or 313A, 355B; three additional credits in Chemistry; Computer Science 308-200A,B; Mathematics 189-222A,B, 223A,B, 314A,B, 315A,B, 319B; Physics 198-251A, 241A,B, 242A,B, 281A,B; six additional credits in Physics.

54 credits: consult the Department of Mathematics for an Adviser.

MATHEMATICS AND PHYSICS

Computer Science 308-200A,B; Mathematics 189-222A,B, -223A,B, -314A,B, -315A,B, -317A,B, -319B, -323A,B, -324A,B; Physics 198-241A,B, -242A,B, -251A, -253B, -281A, -283B, -342B, -346D, -362B, -434B, plus 3 credits chosen from 198-328A, 308-210A,B, or 308-273A,B; 189-415A, -419B, -555D.

59 credits: Consult the Department of Physics for an Adviser.

MICROBIOLOGY AND IMMUNOLOGY

U1: Microbiology 528-211A, 528-212A; Biology 177-200A and 201B, 177-202B or 177-274A;

180-222A,B; Psychology 204-204A,B.

U2: Microbiology 528-314B, 528-323A, 528-324A; Biology 177-301A,B, 177-302A,B; Physiology 552-211D or Biochemistry 507-311A and 507-312B.

U3: 9 additional credits selected from courses offered by the department or 6 credits selected from courses offered by the Department and 3 departmental approved credits.

51 credits: consult the Department of Microbiology and Immunology for an Adviser.

PALEOBIOLOGY

Biology 177-205D, 177-206D, 177-308B; Geology 186l-234A; six credits chosen from 177-325A, 177-326B, 177-442D, 177-348D; Chemistry 180-203A; Geology 186-210A, 186-233B, 186-310A, 186-311B, 186-312B, 186-442A, 186-444B, 186-534D, and 6 approved credits.

57 credits: consult the Department of Geological Sciences for an Adviser.

PHYSICS

Mathematics 189-222A,B, -223A,B, -315A,B; Physics 198-241A,B, -242A,B, -251A, -253B, -281A, -283B, -346D; twenty-eight credits chosen from: Geology 186-502A; Computer Science 308-200A,B; Mathematics 189-314A,B, 189-316B, 189-317A,B, 189-319B; Physics 198-261B, -328A, -334B, -342B, -359A,B, -362B, -434B, -437B, -438A, of which at least three credits must be chosen from the 400 series physics courses.

56 credits: consult the Department of Physics for an Adviser.

PHYSIOLOGY

U1: Biology 177-200A and 201B (or 201D), Chemistry 180-204A, or 180-203A, 180-222A,B; Mathematics 189-231A,B; Physiology 552-211D; Computer Science 308-200A,B (highly recommended).

U2 and U3: Biology 177-301A,B; one of Biology 177-309A, 177-373A, or Mathematics 189-232A,B; Physiology 552-311A, 312B, 313B; six credits in upper level Physiology courses; 12 additional credits in upper level (300, 400, 500) courses in Physiology, Anatomy, Biology, Biochemistry, Experimental Medicine, Microbiology and Immunology, and Pharmacology, and selected courses in psychology and Chemistry.

55 credits: consult the Department of Physiology for an Adviser.

PSYCHOLOGY

Students are required to complete *four* of the basic psychology courses: Learning, Motivation, Perception, Thinking, and Laboratory Methods, during the U1 or U2 years, for a total of *twelve credits.*

Students must complete any *two* of the one-year six-credit sequences which introduce specialized areas of psychological knowledge, for a total of *twelve credits.*

An additional *twelve credits* of psychology electives must be completed, of which *at least six credits* must be at the *400 level* and the *remainder* at the *300 level.*

Finally, each student must complete at least *eighteen credits* from departments other than psychology, selected from among any within the university, consistent with regulations of the Facultyof Science. *Nine* of these credits must be at the *300 level or higher.*

A minimum grade of "c" is required in all 54 credits required for a Faculty Program in Psychology.

54 credits: Consult Mrs. Pat Jenkins, 392-4694 for an Adviser.

QUATERNARY STUDIES

Anthropology 151-357B, Biology 177-205D*, 177-308B, 177-307A, 177-352B and either 177-432A, or 177-325A; Geography 183-203D*, 183-271A*, 183-272B*, 183-305A, 183-306B or 183-308A, 183-321B, 183-322A, 183-324B; Geology 186-233B*, 186-431B.

*Courses that should be taken in U1.

57 credits: consult the Department of Geography for an Adviser.

MAJOR PROGRAMS

Major programs are available in the following disciplines; details are listed with the departmental entries in this Announcement.

Anatomical Sciences
Biochemistry
Biology
Chemistry
Crystallography
Geography
Geological Sciences
Mathematics
Meteorology
Microbiology and Immunology
Physics
Physiology
Physiology and Physics
Psychology
Solid Earth Geophysics

HONOURS PROGRAMS

Honours programs are available in the following disciplines; details are listed with the department entries.

Anatomical Sciences
Biochemistry
Biology
Chemistry
Computer Science
Crystallography
Geography
Geological Sciences

Interdepartmental Honours in Immunology
Mathematics
Mathematics and Computer Science
Meteorology
Microbiology and Immunology
Physics
Physiology
Psychology
Solid Earth Geophysics

MINOR PROGRAMS

The following Minor programs are available in the Faculty of Science.

Computer Science (see Computer Science)

Electrical Engineering (see Physics)

Environmental Studies (see Environmental Studies)

ANATOMY (504)

Professors - Y. CLERMONT *(Chairman),* P.K. LALA; C.P. LEBLOND; D.G. OSMOND; H. WARSHAWSKY
Associate Professors - G.C. BENNETT; J.J.M. BERGERON; J.R. BRAWER; E. DANIELS; B. KOPRIWA; M.F. LALLI; D. LAWRENCE; N.J. NADLER; C.E. SMITH; M. WEINSTOCK
Assistant Professors - A. BEAUDET; L. HERMO; S.C. MILLER; R.A. SIKSTROM

Strathcona Anatomy and Dentistry Building,
Room 1/48, 3640 University Street,
Montreal, PQ, H3A 2B2,
Telephone: 392-4881.

The development of Anatomy spans the entire history of recorded science. Man's interest in his body and how it works is as strong today as it was in ancient civilizations. Indeed, a study of the history of life-sciences is largely a study of the evolution of anatomy and its branches, embryology, neuroanatomy and histology. The Department of Anatomy offers courses which deal with all aspects of the anatomical sciences, but a heavy emphasis is placed on the most advanced aspect, that which encompasses much of what is now called cell biology. Since anatomy forms the basis of medicine, dentistry and health-science research, it is both a fundamental discipline on its own and an excellent training towards any biomedical field. Career anatomists are deeply involved in basic research and in the teaching of human anatomy to undergraduate, graduate, medical, dental and paramedical students. The honours program is designed as the first phase in the training of career anatomists. This is the most desirable path for entry into graduate studies in anatomy, since only a few additional courses are required for the Ph.D. degree which therefore consists almost entirely of basic research. The major and faculty programs offer decreasing levels of specialization in anatomy, but with a broader base in other biological sciences. These programs form a sound background either for studies in the other health sciences, or for basic research in anatomy and other biological fields.

The teachers within the program are anatomists who are themselves actually pursuing research into the structure and function of cells, tissues and organs. For this research, modern techniques of cell biology, immunology, radioautography and electron microscopy are used, and the Department is well equipped with apparatus for cell fractionation, cytochemical analysis, tissue culture, radioautographic facilities and five electron microscopes with complete accessories. The advanced courses are all given by specialists who have contributed to the knowledge in the field. Consequently, students in the anatomical sciences have a unique opportunity to work closely with people actively engaged in research and to observe the influence of that research on their teaching.

PROGRAMS IN THE ANATOMICAL SCIENCES

Beginning in September 1980, new students will follow revised Honours, Major and Faculty programs. The old programs for returning students are also described.
Note: The following courses are required for all old programs in Anatomical Sciences: Biology 177-200A and 201B (or 177-201D); 177-205D; 177-206D; Mathematics: 189-231A,B; Biology 177-301A,B; 177-303A; one of the following; Biology 177-309B; 177-373A; Mathematics 189-232B; Psychology 204-204A,B. (Total of 27 credits).

FACULTY PROGRAM

For details see Faculty Programs beginning of Science section.

MAJOR PROGRAM

The following courses are required: Anatomy, 504-214A, 504-261A, 504-321A, 504-322B, 504-362B, 504-363A, 504-364B, 504-365A, 504-381B, 504-431D. Biology 177-200A and 201B (or 177-201D), 177-205D, 177-206D. Physiology, 552-211D. Chemistry 180-212A,B, 180-222A,B, if not taken previously. Plus 6 additional credits in biologically oriented courses selected in consultation with an adviser.
(63 Required credits)

For returning U3 students, see old program below: The core courses listed above (27 credits); plus, Chemistry 180-212A,B; 180-222A,B; Anatomy 504-261A (Histology); 504-311A (Musculo-skeletal); 504-312B (Visceral); 504-321A (Neuroanatomy); 504-462D (Dynamic Histology);

and 504-431D (Seminars). Students are also advised to take Physiology 552-211D. (58 credits).

HONOURS PROGRAM

The Department offers an Honours Program for those students interested in a career in Anatomy. This program is the usual path for entry into Graduate studies in Anatomy. For the Honours program, students will register at the major level in U1. Entrance to the Honours Program is at the beginning of U2. The student must obtain a G.P.A. of at least 3.0 at the end of U1. It is expected that at the beginning of the third year, the students who wish to continue in the Honours Program will be those who feel that they are seriously interested in a career in Anatomy. It will, therefore, be necessary to apply to the Departmental Chairman for maintenance of the Honours Program status at the beginning of U3. The Honours Degree will be recommended after successful completion of the Program with a C.G.P.A. of 3.0 at the end of U3.

The following courses constitute the Honours Program:

Anatomy, 504-214A, 504-261A, 504-315A, 504-321A, 504-322B, 504-362B, 504-363A, 504-364B, 504-365A, 504-381B, 504-431D, 504-433D, 504-533D (Total 48 credits). Biology, 177-200A, 177-201B, 177-205D, 177-206D, 177-301A,B. One of either Biology 177-302A,B, or Microbiology and Immunology 528-314B. Physiology 552-211D, Chemistry 180-212A,B, 180-222A,B, if not taken previously. One of the following: Mathematics 189-231A,B, or Biology 177-373A or Psychology 204-204A,B.
(82 Required credits)

For returning U3 students, see the old program below:
The core courses listed above (27 credits); plus, Chemistry 180-212A,B; 180-222A,B; 180-204A; Biology 177-302A,B; Anatomy 504-261A (Histology); 504-311A (Musculoskeletal); 504-312B (Visceral); 504-321A (Neuronanatomy); 504-462D (Dynamic Histology); 504-431D (Seminars); 504-533D (Experimental Morphology); 504-433D (Research), making a total of 82 credits.

Course Descriptions

NOTE: Enrolment in Anatomy courses is limited by space restrictions. All students, other than those in Anatomy Programs, must consult the Departmental Representative at registration.

- *Denotes not offered in 1982-83.*

504-214A SYSTEMATIC HUMAN ANATOMY. (3 credits; 2 hours lectures, 2 hours laboratory. Open to students in biological sciences and others by special permission). This course provides a comprehensive coverage at the introductory level of the anatomy and development of the various organ systems of the human body. Laboratories include studies of prepared specimens, use of the anatomical museum and audio-visual materials.
Professor Hermo

504-261A INTRODUCTION TO DYNAMIC HISTOLOGY. (4 credits; 3 hours lectures, 2 hours laboratory. Open to students in biological sciences and others by special permission). An introduction to light and electron microscopic anatomy in which cell and tissue dynamics will be explored in the principal tissues and organs of the body.
Professor Warshawsky

504-315A REGIONAL ANATOMY OF THE LIMBS AND BACK (With Dissection). (4 credits; 2 hours lectures, 4 hours laboratory. Prerequisite: 504-214A. Open to Honours students in anatomical sciences, students in Physical and Occupational Therapy and to others by special permission). A dissection course in regional human anatomy of the skeleton, joints, muscles and neurovascular structures of the limbs and back. (Not open to students who have taken 504-213A).
Staff

504-321A GENERAL HUMAN NEUROANATOMY. (3 credits; 2 hours lectures, 2 hours laboratory. Prerequisite: at least one 3 credit University level course in biology or psychology, or by special permission). Introductory course in neuroanatomy emphasizing the structure and function of the brain, spinal cord and peripheral nerves.
Professor Brawer

504-322B NEUROENDOCRINOLOGY. (3 credits; 2 hours lectures, 1 hour conference; offered every alternate year. Prerequisite: 504-321A). A lecture course describing the anatomical basis for brain-endocrine relationships. Emphasis will be placed on modern experimental evidence and conceptual developments within the field.
Professors Brawer and Nadler

504-362B THE CALCIFIED TISSUES. (3 credits; 2 hours lectures, 2 hours laboratory; offered every alternate year. Prerequisite: 504-261A or by special permission). An advanced course to illustrate the approach to dynamic histology using the calcified tissues as a model. A detailed analysis of the structure and mode of formation of connective tissue, cartilage, bone and teeth. (Not open to students who have taken 504-462D).
Professor Warshawsky

- **504-363A DYNAMIC HISTOLOGY OF THE GASTROINTESTINAL AND MALE REPRODUCTIVE EPITHELIA.** (3 credits; 2 hours lectures, 2 hours conference; offered every alternate year. Prerequisite: 504-261A or by special permission). This course is an advanced analysis of two types of epithelia characterized by continuous renewal of the component cells. About one-half of the course will be devoted to the seminiferous

epithelium. The other half will deal with the epithelia lining the various parts of the digestive system. (Not open to students who have taken 504-462D).
Professors Clermont and Leblond

- **504-364B CELLS AND TISSUES OF THE HEMOPOIETIC AND IMMUNE SYSTEMS.** (3 credits; 2 hours lectures, 2 hours conference; offered every alternate year. Prerequisite: 504-261A or by special permission). This course is a detailed consideration of the hemopoietic (blood forming) and immune (lymphoid) systems, including the structural organization of their component tissues, and the renewal, differentiation, life history and function of their various cell lineages. Particular emphasis is given to lymphocyte subpopulations, their surface membrane receptors and other differentiation markers.
Professors Lala and Osmond

504-365A CELL BIOLOGY OF THE SECRETORY PROCESS. (3 credits; 2 hours lectures, 3 hours laboratory; offered every alternate year. Prerequisites: 504-261A, 177-200A, 177-201B, or by special permission). An intensive study of the process of protein secretion. The emphasis will be placed on morphological aspects of the secretory process, and on the two major techniques which have provided experimental evidence, namely, subcellular fractionation and quantitative electron microscope radioautography.
Professors Bennett and Bergeron

- **504-381B EXPERIMENTAL BASIS OF EMBRYOLOGY.** (3 credits; 2 hours lectures, 2 hours laboratory; offered every alternate year. Prerequisites: 504-214A, 504-261A, or by special permission). This course is a detailed study of the development of tissues, organs and systems in embryos and fetuses. Emphasis is placed on modern experiments examining the origin and interactions of cells and tissues in the formation of complex functional tissues and organs.
Professor Daniels

504-431D SEMINARS IN ANATOMICAL SCIENCES. (4 credits). One advanced research seminar per week over the entire year given by invited local or out-of-town speakers on their own current research activities. All biological science students are invited to attend, but only Anatomical Sciences Major and Honours students can take this course for credit.
Professor Kopriwa

504-432D RESEARCH PROJECTS IN ANATOMICAL SCIENCES. (6 credits; 10 hours. Prerequisites: Honours in Anatomical Sciences in the U2 year; Corequisites: Honours Program in U3). A full year's exposure to individually supervised, original research in anatomical sciences. The concentration will be on the application of morphological methods such as electron microscopy and radioautography to the solution of basic problems in cell biology. A research report, plus an oral examination by a Department Committee will evaluate the candidate's performance.
Staff

504-533D EXPERIMENTAL MORPHOLOGY. (6 credits; 3 hours per week, plus additional sessions. Prerequisites: Honours Program in Anatomical Sciences in U2; Corequisites: Honours Program in U3). A lecture and practical course on the use of experimental techniques applicable to morphological research. This course is designed for Honours and graduate students only and stresses methods currently used in the Department, such as radioisotopic tracers, radioautography, light and electron microscopy.
Professors Nadler, Weinstock and Staff

BIOCHEMISTRY (507)

Professors – R.M. JOHNSTONE *(Chairman);* M.J. FRASER; A.F. GRAHAM; E.A. HOSEIN; S. SOLOMON; T.L. SOURKES, L.S. WOLFE
Associate Professors – R. BLOSTEIN; P.E. BRAUN; R.E. MACKENZIE; E.A. MEIGHEN; S. MILLWARD; W. MUSHYNSKI; J. SHUSTER; A.R. WASSERMAN
Assistant Professors – G. SHORE; J. SILVIUS; N. SONENBERG
Emeritus Professor – K.A.C. ELLIOTT
Associate Members – M.K. BIRMINGHAM *(psychiatry);* L.F. CONGOTE *(Exp. Medicine);* C. DUPONT *(Pediatrics);* D. EDWARD *(Exp. Surgery);* W.C. GALLEY *(Chemistry);* L. GOODFRIEND *(Exp. Medicine);* R. HAND *(McGill Cancer Centre);* B.G. LIVETT *(Neurology);* H. PAPPIUS *(Exp. Neurochemistry);* J.F. PERDUE *(Lady Davis Institute);* P.J. ROUGHLEY *(Shriners Hospital);* C. SCRIVER *(Pediatrics)*

Room 802, McIntyre Medical Sciences Building
3655 Drummond Street,
Montreal, PQ, H3G 1Y6,
Telephone 392-4243.

Biochemistry is the application of chemistry to the study of biological processes at the cellular level. Biochemists are interested, for example, in mechanisms of brain function; cellular differentiation; energy utilization by animals, plants and microorganisms and in the chemical basis of inheritance and disease. The biochemist seeks to determine how specific molecules such as proteins, nucleic acid, lipids, vitamins and hormones function in these various processes. Particular emphasis is placed on the regulation of chemical reactions in living cells. The knowledge and methods developed by biochemists are applied in all fields of medicine, in agriculture and in many chemical and health related industries. Biochemistry is unique in providing teaching and research in both enzymology and genetic engineering, the two basic components in the rapidly expanding field of Biotechnology.

Three programs are offered by the Department of Biochemistry. The Honours and Major programs provide a sound background for students who wish to have a professional career in biochemistry and can lead to post graduate studies and research careers in hospital, university or industrial laboratories. The Faculty program is less specialized offering students opportunities to select courses in other field of interest.

During the first year, each program provides basic training in organic, physical and analytical chemistry as well as in biology and physiology. The Honours and Major programs become more specialized in biochemistry during the succeeding two years with additional work in chemistry and biology. The rigorous training in chemistry which distinguishes the Biochemistry program from Biological Sciences can lead to admission to the Professional Order of Chemists — a requirement needed to function as a recognized chemist in the Province of Québec.

The increasing involvement of complex technology in modern society requires personnel trained in both chemistry and biology. With the advent of Biotechnology, the combination of chemistry. Molecular biology, enzymology and genetic engineering found in the Biochemistry program provides the essential background and training in this area as well. The biochemist is in an advantageous position to fulfill this role and assume a wide variety of positions in industry and the health field. These range from research and development in chemical and pharmaceutical industry to testing and research in government and hospital laboratories and to management. Many graduates take higher degrees in research and attain academic positions in universities and colleges.

The Department of Biochemistry is located in the McIntyre Medical Sciences Building. The teaching and research laboratories are well equipped for modern biochemical research. All members of the Department carry out research projects in collaboration with their students and post doctoral fellows.

Inquiries about programs should be directed to the Department of Biochemistry, Room 802, McIntyre Medical Sciences Building, telephone: 392-4243.

FACULTY PROGRAM

For details see Faculty Programs, beginning of Science section.

Entrance requirements for the Faculty program are: 6 credits elementary Biology, 6 credits general Chemistry, 3 credits organic Chemistry, 6 credits Calculus, 8-9 credits Physics.

MAJOR PROGRAM

Entrance requirements for the Major program are: 6 credits elementary Biology, 6 credits general Chemistry, 3 credits organic Chemistry, 6 credits Calculus; 3 credits Analytical Geometry and Vectors, 8-9 credits Physics.

Students may transfer into the Major program at any time provided they have met all course requirements.

NOTE: Students who wish to qualify for admission to *L'Ordre des Chimistes:* must complete 6 additional credits in physical chemistry and 2 additional credits in laboratory work as options or electives in their course program. Chemistry 180-222 (CEGEP Chemistry 302), if taken in CEGEP, will not be credited for the Ordre des Chimistes. Students must make up 4 additional credits in organic chemistry in order to meet the requirements.

The following courses are required to complete the Major program in Biochemistry:

(Total of 66-67 required credits.)

U1: (32 credits) Biology 177-200A, 177-201B (or 177-201D); Chemistry 180-204A,B, 180-214B, 180-222A,B 180-257D; Mathematics 189-222A,B and one of the following: Biology 177-205D or Physiology 552-211D, plus a 3 credit elective chosen in consultation with the adviser.

U2: (29-32 credits) Biochemistry 507-311A, 312B; Biology 177-301A,B, 177-302A,B; one of the following: Biology 177-309A, 177-373A, Mathematics 189-315A,B or Computer Science 308-200A,B; Chemistry 180-302A,B, 180-362A,B and one of the following: Chemistry 180-352B, 180-382A and 6-9 credits of electives chosen in consultation with the adviser.

U3: (27-30 credits) Biochemistry 507-450A, 507-454A, plus 9 credits from the following: Biochemistry 507-404B, 507-455B, 507-456B, 507-503A; Biology 177-303A, 177-310B, 177-314A; Chemistry 180-313A, 180-352B, 180-472B, 180-382A, 180-387D, 180-402B, 180-452A, Microbiology 528-314B and an additional 12-15 credits of elective courses chosen in consultation with the adviser.

HONOURS PROGRAM

Admission to the Honours program will not be granted until U2. Students who wish to enter the Honours program in U2 should follow the U1 Major program. Those who satisfactorily complete the U1 Major program with at least a GPA of 3.1 and B in every required course are eligible for admission to the Honours program.

There is no admission to the Honours program in U3.

Promotion to U3 year is based on satisfactory completion of U2 courses with a GPA of at least 3.2 and a B in every required course. In borderline cases, the mark received in Biochemistry

507-311A/312B will be of particular importance for promotion to U3.

For graduation in the Honours program, the student must complete a minimum of 90 credits, pass all required courses with a grade of no less than B, and achieve a CGPA of at least 3.2.

Courses in the Chemistry Honours program may be substituted for comparable courses in the Biochemistry department with the permission of the Chemistry instructor. All other substitutions for required courses must have Biochemistry Departmental approval.

The following courses are required to complete the Honours program in Biochemistry.

(Total of 85 required credits)

U1: Students must complete the *U1 Major program* as prerequisite for admission to the Honours program at the U2 level. See Major program description for further details.

U2: (29-32 credits) Biology 177-301A,B, 177-302A,B; Biochemistry 507-311A, 312B; Mathematics 189-315A,B; Chemistry 302A,B, 180-313A, 180-362A,B plus one of the following: Chemistry 180-352B, 180-382A plus a science option (3 credits).

U3: (27-30 credits) Biochemistry 507-404B, 507-450A, 507-454A, 507-460A, plus 12 credits from the following lists of courses, 6 of which must be taken from List A.

List A: Biology 177-310B, 177-314A; Biochemistry 507-455B, 507-456B, 507-503A, Chemistry 180-402B, 180-452A, Microbiology 528-314B.

List B: Biochemistry 507-491B; Biology 177-303A, 177-311B; Chemistry 180-352B, 180-472B, 180-382A, 180-387D; Exp. Med. 516-502A, 516-503B; Pharmacology 549-461D; Physiology 552-311D; and additional 3 credits of electives chosen in consultation with the adviser.

Consult the Department of Biochemistry for an Adviser.

INTERDEPARTMENTAL HONOURS PROGRAM IN IMMUNOLOGY

The Departments of Biochemistry, Microbiology and Immunology and Physiology offer an interdepartmental Honours program in Immunology. Details of this program may be found under Immunology.

Course Descriptions

• *Denotes not offered 1982-83.*

177-301A,/302B. LABORATORY IN CELL AND MOLECULAR BIOLOGY. PARTS I AND II. (See Biological Sciences Core Curriculum listings).

507-311A CARBOHYDRATE AND LIPID METABOLISM. (3 credits; Prerequisites: Biology 177-200A, 177-201B (or 177-201D); Co-requisites: Biology 177-301A, 177-302B). A general course in carbohydrate and lipid metabolism in mammalian systems, emphasizing the regulatory aspects at the molecular, cellular, and organ levels and their integration.
Professor Braun

507-312B REGULATION OF NITROGEN METABOLISM. (3 credits; Prerequites: Biology 177-200A, 177-201B (or 177-201D), Biochemistry 507-311A). Regulation of degradative and biosynthetic pathways of amino acids (and protein synthesis), nucleotides in mammalian and unicellular systems. Emphasis is placed on regulation at the molecular level including the role of allosteric enzymes.
Professor Johnstone

507-404B BIOPHYSICAL CHEMISTRY. (3 credits; Prerequisites: Chemistry 180-204A,B, 180-214B or equivalent, Chemistry 180-313A recommended. This course is also listed as Chemistry 180-404B). Molecular weight determination and hydrodynamic parameters, optical properties and structure analysis of biopolymers and application to biological systems. (Not open to students who have taken or are taking Chemistry 180-404B).
Professors Meighen and Galley (Chemistry Dept.)

507-450A PROTEIN STRUCTURE AND FUNCTION. (3 credits; Prerequisites: Biochemistry 507-311A, 312B and/or sufficient organic chemistry. Intended primarily for Biochemistry and Chemistry students at the U3 level). Primary structures of proteins and their evolution. Secondary, tertiary and quaternary structure of enzymes. Enzyme kinetics and mechanisms of catalysis. Multienzyme complexes. Allosteric enzymes.
Professors Fraser and Meighen

507-454A NUCLEIC ACIDS. (3 credits; Prerequisite: Biochemistry 507-311A, 312B or permission of instructor). Chemistry of mammalian, bacterial and viral nucleic acids; synthesis of polynucleotides; replication, transcription, translation and the control thereof.
Professor Millward

507-455B NEUROCHEMISTRY. (3 credits, Prerequisites: Biochemistry 507-311A, 312B). Structure and composition of nervous tissue in relation to its functions. Special aspects of metabolism of nerve and brain including energy metabolism. Water and electrolyte balance. Exchanges between blood and brain, and between brain and cerebrospinal fluid. Neurotransmitters and modulators. Nutrition and development of the nervous system. Neuroendocrinology. Biochemistry of nervous and mental diseases.
Professors Sourkes, Wolfe and Staff

507-456B BIOCHEMISTRY OF MEMBRANES (3 credits; Prerequisites: Biochemistry 507-311A,

312B, Chemistry 180-214B or equivalent, or by consent of the instructors). Intended for U3 level students. Biochemical and physiochemical approaches to membrane structure. Membrane biogenesis. Transport mechanisms and energy transduction in membrane systems. Immunochemical approaches to the cell surface. Receptor-effector interactions in membranes.
Professors Braun and Blostein

507-460A ADVANCED LABORATORY IN BIOCHEMISTRY. (6 credits; limited enrolment). The advanced biochemistry laboratory will consist of a set of experiments intended to illustrate various biochemical techniques.
Staff

507-491B RESEARCH PROJECTS IN BIOCHEMISTRY. (6 credits; registration by departmental permission only; Prerequisite: Biochemistry 507-460A). Individual work on a project to be performed in a research laboratory.
Professor Angelides and Staff

507-503A IMMUNOCHEMISTRY. (3 credits.) This course deals with the structure, genetics and function of immunoglobulins. Examples of immunochemical systems will be given.
Professor Shuster

BIOLOGY (177)

Professors – W.G. BOLL; E.R. BOOTHROYD; P.S. DIGBY; S.P. GIBBS; E. KÄFER; J. KALFF; W. LEGGETT *(Chairman);* R.E. LEMON; G.A. MACLACHLAN; J.R. MARSDEN; B.B. MUKHERJEE; F. RIGLER; R. SATTLER

Associate Professors – G. BELL; B.P. BRANDHORST; A.H. BUSSEY; R. CHASE; M.E. GOLDSTEIN; P. HECHTMAN; D.L. KRAMER; M. LECHOWICZ *(on leave);* R.L. LEVINE; V.M. PASZTOR; R. PETERS; R.J. POOLE *(on leave);* R. SINCLAIR; K. SITTMANN; J.L. SOUTHIN; D. TRASLER; H. TYSON; D.P.S. VERMA *(on leave)*

Assistant Professors – D. BOUCHER; G.G. BROWN; L. LEFEBVRE; K.M. NEWROCK; Y. NISHIOKA; G. POLLACK; D. ROFF

Faculty Lecturers – S. CAHN; E. SHAPIRO

Affiliated Staff – R.L. CARROLL *(Redpath Museum);* M.A. CURTIS *(Institute of Parasitology);* M.J. DUNBAR *(Oceanography);* F. GLORIEUX *(Shriners Hospital);* W.F. GRANT *(Agriculture, Macdonald College);* R.K. STEWART *(Department of Entomology);* L. KLEIMAN *(Lady Davis Institute);* J. LEWIS *(Redpath Museum);* L. PINSKY *(Paediatrics);* H. REISWIG *(Redpath Museum);* D. ROSENBLATT *(Paediatrics);* C.R. SCRIVER *(Paediatrics)*

Room W4-8A,
Stewart Biology Building,
1205 Avenue Docteur Penfield,
Montréal, PQ, H3A 1B1,
Telephone: 392-5828

Biology is the science of life. It not only provides the basic information needed by vital applied fields such as agriculture, biotechnology, environmental protection, medicine and wildlife management, but it also deals with fundamental questions about the origin, evolution and extinction of living beings, including humans. Consequently, biology stands at the meeting place of our theoretical, practical and humanistic concerns.

A. B.Sc. degree in biology can lead to many different careers. It serves as a prerequisite for entry to professional schools in agriculture, education, library science, medicine or nursing. For those interested in doing biological research, the McGill B. Sc. is accepted by graduate faculties in universities the world over. It is also good preparation for technical or administrative posts in industry, government laboratories, hospitals and research institutes. For those interested in environmental issues, the outdoors, or work in remote areas, a B.Sc. in biology is equally useful.

The Biology Department at McGill trains students in many branches of biology. These are detailed below under Faculty and Major programs.

The Stewart Biology Building is well equipped for teaching and research with apparatus ranging from electron microscopes to controlled environment chambers. Its resources are extended by affiliation with other organizations such as the Redpath Museum, Institute of Oceanography, Macdonald College, and the Montreal Children's and Jewish General Hospitals. For courses taught in the field, the facilities and unspoiled environments at Mont St. Hilaire, the Morgan Arboretum and the Huntsman Marine Laboratory in New Brunswick are used. In addition, field stations in Barbados, Lake Memphremagog and at Schefferville in northern Québec are available for research projects.

Faculty or Major Programs in Biology are suitable to be combined with Minor Programs in Computer Science and Environmental Studies.

Entrance requirements for programs in the Faculty of Science are listed under Admissions in the General Information section at the beginning of this Announcement. The prerequisites for Biology Programs are those of CEGEP profile 10.11 and include, in addition to the minimum requirements for admission to the Faculty, CEGEP Biology 401 or equivalent (Biology 177-112B), and one course in Organic Chemistry, CEGEP Chemistry 202 or equivalent (Chemistry 180-212A,B). Students who have a D.C.S. in Science but lack either of these courses must take them as extra requirements. It is advisable to take the above Biology course in advance, if possible, since it is a strict prerequisite to the basic courses in Cell and Molecular Biology (177-200A and -201B or 201D) which are normally taken in first year.

Any inquiries will be answered by Mrs. S. Cahn,

the Senior Program Adviser, in Room W4/8A (telephone 392-5828) or by Elizabeth Mader (392-4980) of the Department of Biology at 1205 Avenue Docteur Penfield.

UNDERGRADUATE PROGRAMS

The courses listed below are not described in any great detail. To provide more information, the department has prepared a "Blue Book" (sold in the Biology Dept., room W4/5), entitled DEPARTMENT OF BIOLOGY UNDERGRADUATE PROGRAMS 1982-83, which describes in detail the content of each course and the level at which it is given, the aims and methods used, lecturers, references, grading procedures, etc. The book also contains more information on registration, counselling, committee structure and the research interests and facilities which are represented in the department.

FACULTY PROGRAM

In view of the constantly changing job market for B.Sc. graduates in Biology, the Department has designed the Faculty Program to allow students to prepare for a wide range of employment opportunities. The program offers the student an opportunity to: 1) specialize in more than one area of biology, 2) broaden the scope of their scientific background, and 3) expand their knowledge in non-scientific areas. In consultation with a departmental adviser a student's program can be tailored to provide a relatively broad spectrum of biology courses, or provide a degree of specialization in biology which approaches that of a Majors' Program (total biology 36 to 54 credits). It is the Department's view that the flexibility and scope of this program will not only enhance the graduate's prospects for employment, but will qualify the student with good grades for entrance into a graduate training program in Biology are listed at the beginning of the Science section together with other Science Faculty Programs; some of these include a sequence of courses in Biology.

MAJOR IN BIOLOGY

There are seven Options in the Biology Major Program. These have been designed to offer specialized training in those areas of biology in which the Department has outstanding human and physical resources. The major programs are recommended to students who have a clear interest in one of these subject areas. However the U1 requirements are very similar in all options, making it possible to change from one option to another, with little or no penalty at the end of the U1 year. The requirements and recommended course sequences are listed below.

Courses Required For Major Options

All Biology Major Options require the following basic courses: Biology 177-200A, -201B (or -201D), -202B, (or -274A), -205D, -206D and -301A,B as well as a statistics course, usually Biology 177-373A, and Mathematics 189-231A,B (except if Mathematics 189-205A, or -221A,B or -222A,B or equivalents have been taken previously).

ANIMAL BEHAVIOUR OPTION. (57 credits):

Animal behaviour studies what animals actually do in meeting the demands for resources, both physical and social. The program relates to ecology, neurobiology, psychology.

U1: Biology 177-200A and -201B (or -201D), -202B (or 274A), -205D, -206D.

U1 or U2: Mathematics 189-231A,B;

U2: Biology 177-391A, -392B.

U2 or U3: Biology 177-301A,B, -304A or -308B; -373A (177-309A, 189-232A,B, 204-204A,B may be substituted for 177-373A by permission of adviser).

Plus 21 credits in U1, U2 or U3 from the following:
Biology 177-303A, -304A or -308B, -325A, -326B, 331G, -340A, -345A, -348D, -349A, -350A, -351B, -352B, -354B, -358B, -386A, -387B, -389B, -394B, -477A (or -478B,E) -493B;
Computer Science 308-200A,B or -202A,B, Psychology 204-300A, -308D, -340A, -404B, -423A.

CELL, MOLECULAR AND DEVELOPMENT OPTION. (60 or 61 credits):

Form and function in the living cell are exquisitely integrated, as molecules, as structures and as communication systems. Understanding the molecular kaleidoscope of synthesis and regulation in the cell is an intellectual challenge, and is essential to the proper use of genetic modification for the benefit of society.

U1: Biology 177-200A and 201B (or -201D), -202B (or -274A), -205D, -206D;
Chemistry 180-222A,B.

U1 or U2: Chemistry 180-203A (or 204A,B);
Mathematics 189-231A,B.

U2: Biology 177-301A,B, -302A,B, -303A.

Plus one of the following courses:
Biology 177-309A, -373A; or
Mathematics 189-232A,B.

Plus 12 credits in U2 from the following:
Biology 177-310B or -322A; -321A or 524B; -318B or -320B or -417B; -312A or 314A; -313B or -315A or -411B; Biochemistry 507-311A, or Chemistry 180-302A,B or -214B.

Plus 8-9 credits in U2 or U3 from any courses of

the above list or the following:
Biology 177-308B, -323B, -368A, -471A, -476B, -477A (or -478B,E), -500C;
Anatomy 504-261A;
Biochemistry 507-312B, -404B, -450A, -454A, -456B, -503A;
Chemistry 180-402B;
Microbiology and Immunology 528-314B, -323A*, -324A*;
Physics 198-217B.

*Prerequisite 528-211A to be taken as an elective.

ECOLOGY OPTION. (60 credits):

The ecology option provides the conceptual and technical skills necessary to analyze and predict the responses of organisms in both natural and disturbed environments. Students are well prepared for either immediate careers in government and industry or for advanced academic training.

U1: Biology 177-200A and -201B (or -201D), -202B, -205D, -206D;
Mathematics 189-231A,B.

U1 or U2: Biology 177-304A, -308B.
U2 or U3: Biology 177-301A,B, -303A, -373A;
Computer Science 308-200A,B, or -220B or 202A,B;
Biology 177-331G or Geography 183-499G or Huntsman Marine Laboratory Field Course.

Plus at least 6 credits from the following:
Biology 177-325A, -326B, -328B, -429B, -432A, -433D;
Geography 183-450A.

Plus 12 credits in U1-U3 from the above or the following:
Biology 177-340A, -345A, -348D, -349A, -350A, -351B, -352B, -354B, -357A, -358B, -359B, -362B, -391A, -392B, -394B, -442D, -477A (or -478B,E);
Geography 183-305A, -321B or -324B, -451B, -523B;
Mathematics 189-232A,B;
Biology 177-309A.

HUMAN GENETICS OPTION. (64 credits):

This option is designed to expose the student to molecular, cellular and organismal biology through the "eyes" of genetic variation. Those who complete the option will have received sufficient background to seek technical-level employment in laboratories that provide medical genetic services or are devoted to research in cell and molecular biology.

U1: Biology 177-200A, and 201B (or -201D), -274A or 202B, -205D, -206D;
Mathematics 189-231A,B.
U1 or U2: Chemistry 180-222A,B, -203A (or -204A,B).
U2 or U3: Biology 177-301A,B, -303A, -321A, -368A, -370B, -372B, -373A, -417B or -318B or -320B, -471A or -476B.

Plus 9 credits, in U2 or U3 from the following:
Biology 177-304A, or -308B, -310B, -314A, -322A, -477A (or -478B,E);
Biochemistry 507-311A, -503A;
Computer Science 308-200A,B or -220B.
(It is recommended that Physiology 552-211D be taken as an elective).

MARINE BIOLOGY OPTION. (57 credits):

The marine biology option is designed to give students a broad introduction to modern biology which will form the basis of further studies of marine plants and animals, or to employment in the fields of aquatic biology and oceanography.

U1: Biology 177-200A and 201B (or -201D), -202B or -274A, -205D, -206D;
Mathematics 189-231A,B.

U2 or U3: Biology 177-301A,B, -308B, -348D, -373A, -442D.

Plus 9 credits in U2 or U3 from the following:
Biology 177-325A, -326B, -328B, -331G, -340A, -349A, -351B, -359B, -384A, -432A.

Plus 6 credits from the following:
Biology 177-477A (or -478B,E);
Computer Science 308-200A,B or -202A,B or -220B;
Geography 183-110A, -112B, or -203D;
Geology 186-201A, -233B, -234A;
Oceanography 395-537B, -545A, -591D; Huntsman/Marine Laboratory Field Course;
Meteorology 195-210A, -211B;
Physics 198-309A;

NEUROBIOLOGY (60 credits):

This option offers factual, theoretical and practical instruction about nervous systems. Structural and functional aspects are considered at levels of biological organization ranging from the sub-cell to the organism. The program is designed for students who seek careers in medicine, dentistry, research or teaching.

U1: Biology 177-200A and 201B (or -201D), -202B or -274A, -205D, -206D;
Mathematics 189-231A,B;

U2: Biology 177-301A,B, -386A, -387B, -389B, and -304A or -308B;
and one of the following:
Biology 177-309A, -373A or
Mathematics 189-232A,B;

U3: Biology 177-588A or -587B
Plus 18 credits from the following:
Biology 177-303A, -391A, -392B, -394B,

-477A (or -478B,E), -587B or -588A;
Psychology 204-308D*, -311A*, -342B*, -410B, -422B*, -423A*, -426A*;
Biochemistry 507-311A*, -312B, -455B;
Anatomy 504-321A;
Physiology 552-211D, -311A, -454A, -456B;
Experimental Medicine 516-502A, -503B.

*For courses in Departments other than Biology, prerequisites will have to be taken as electives.

PLANT SCIENCE OPTION (60 credits)
The plant biology option provides a broad and fundamental background in the organismal and molecular aspects of plants. It emphasizes training for later work in areas of contemporary research and practical interest, especially the productivity of native and agricultural species.

U1: Biology 177-200A and 201B (or -201D), -202B or 274A, -205D, -206D;
Mathematics 189-231A,B.

U2 or U3: Biology 177-301A,B, -355A -357A, -358B, 366B, -373A and -565B.

Plus 18 credits from the following with at least two courses from each section:

U1-U3: Biology 177 -308B, -325A, -326B, -362B, -364B, -429B, -433D;
Geography 183-450A;

U1-U3: Biology 177-302A,B, -303A, -310B, -315A, -316B, -320B, -321A, -411B, -500C, -524B;
Chemistry 180-203A (or -204A,B), -222A,B.

HONOURS IN BIOLOGY

The Honours program in Biology is designed expressly as a preparation for graduate studies and research, and provides students with a broad training in Biology and some research experience in a chosen area. A student may apply to enter the Honours program from any of the Biology Major Options at the time of registration for the U2 year with provisional acceptance and departmental registration based on U1 GPA (min. 3.2). Final acceptance for Honours at the end of U2 is based on achievement of a CGPA or GPA of 3.2 or better, and approval of a 9 or 12-credit Independent Studies proposal (see listing of 177-479D,G and 480D,G for details). For an Honours degree, attainment of a minimum GPA of 3.2 in the U3 year, and adherence to the program as outlined below are the additional requirements.

credits required

U1: 6 Biology 177-200A and 201B (or -201D)
3 Biology 177-202B or 177-274A
6 Biology 177-205D
3 Biology 177-206D
3 Mathematics 189-231A,B

U2 and U3: Completion of upper-year courses in area of specialization to fulfill the requirements of one Major Program which must include 177-373A.
Plus 6 credits Biology not listed in the above, but in one of the other Major Options.

U3: 9 or 12 Independent Studies in Biology, 177-479D,G or -480D,G
4 Honours Seminar in Biology, 177-499D.

COURSES OPEN TO NON-BIOLOGISTS

Many aspects of biology interest humanists and scientists specializing in other disciplines. Therefore, several courses are offered to students with little or no background in biology. These are either CEGEP equivalent courses (177-111A and -112B), service courses (177-373A), or general interest courses such as "Ecology and Human Society" (177-230A), "Social Issues in Biology" (177-269A), "Modern Biology and the Predicament of Man" (177-246A), "Philosophie de la biologie" (177-346A), "History of Biology" (177-347B), and "Plants and Man" (177-364B).

INTRODUCTORY CEGEP – EQUIVALENT COURSES

Biology 177-111A and 177-112B.

COURSE DESCRIPTIONS

• *Denotes not offered in 1982-83.*

177-111A PRINCIPLES OF ORGANISMAL BIOLOGY. (3 credits; 2 lectures and one 3-hour laboratory per week; Prerequisite: none. NOT OPEN TO STUDENTS WHO HAVE PASSED BIOLOGY 301 AT CEGEP). This course is an introduction to the structure, function and adaptation of plants and animals in the biosphere. Open to all students (B.Sc., B.A., B.ED., B.Eng., etc.) wishing introductory biology. This course serves both as a prerequisite for Biology 177-205D and 177-206D, and as an alternative to CEGEP Organismal Biology.
Professors Pasztor and Goldstein

177-112B INTRODUCTION TO CELL AND MOLECULAR BIOLOGY. (3 credits; 2 lectures and a 3-hour laboratory or seminar period per week; Prerequisite: none. NOT OPEN TO STUDENTS WHO HAVE PASSED BIOLOGY 401 AT CEGEP). The cell: ultrastructure, division, chemical constituents and reactions. Bioenergetics: photosynthesis and respiration. Principles of genetics and the molecular basis of inheritance. This course serves as a prerequisite for Biology 177-200A and -201B (or -201D) and as an alternative to CEGEP Cell Biology.
Professor Southin and Mrs. Cahn (Co-ordinator)

177-200A MOLECULAR BIOLOGY. (3 credits; 3 lectures per week, 1 hour tutorial per week; Prerequisite: 177-112B or equivalent; Corequisite: 180-212A or equivalent). The physical and chemical properties of the cell and its components are discussed and related to their structure and function. Topics include: 1. Protein structure, enzymes and enzyme kinetics. 2. Biosynthesis of macro-molecules with emphasis on nucleic acid replication, transcription and translation. 3. The genetic code, polycistronic mRNA, recombinant DNA techniques mutation, recombination, gene regulation, including the genetics of regulatory and structural genes, complex operons. (Not to be taken for credit by students who have taken 177-201D).
Professor Southin (Co-ordinator, Biology), and Shore (Biochemistry)

177-201B CELL BIOLOGY AND METABOLISM. (3 credits; 3 lectures per week, 1 hour tutorial per week; Prerequisite: 177-200A). Contemporary ideas in cell biology derived from studies at the cellular and subcellular level are presented. Topics include: 1. The ultra-structure of the cell and its organelles with dynamic considerations of synthetic processes at the morophological level. 2. Bioenergetics and intermediary metabolism, glycolysis, tricarboxylic acid cycle, electron transfer, oxidative phosphorylation, photosynthesis and synthesis of small molecules, with examples of metabolic regulation. 3. Membrane concept, transmembrane electrical potential, transport phenomena and their interpretations at the molecular level. (Not to be taken for credit by students who have taken 177-201D).
Professors Southin (Co-ordinator), and Hechtman (Biology), and Archibald (Microbiology)

177-202B BASIC GENETICS. (3 credits; 3 hours lectures, 1 hour conference optional; Prerequisite: 177-200A). Introduction to basic principles, and to modern advances, problems and applications in the genetics of higher and lower organisms with examples representative of the biological sciences. (Not open to students who have taken or are taking 177-274A).
Professors Sittmann (Co-ordinator), Boothroyd, Pinsky and Käfer

177-205D BIOLOGY OF ORGANISMS. (6 credits; 3 hours lectures; Prerequisite: 177-111A or equivalent). A study of organisms from the standpoint of structural and physiological adaptation to the environment. Mechanisms of evolution. Adaptations necessary for major evolutionary advances. Life in aquatic, terrestrial and aerial environments; examples drawn from all major taxa.
Professor Marsden (Co-ordinator) and Staff

177-206D LABORATORY COURSE IN BIOLOGY OF ORGANISMS. (3 credits; 1 laboratory per week or its equivalent throughout the year; Co-requisite: 177-205D). A companion course to the lecture series in Biology of Organisms. Examination of the functional morphology of micro-organisms, plants and animals, both living and fossil. Experimental studies on the physiological adaptations of organisms to their environment.
Professors Rigler, Marsden and Mrs. Shapiro (Co-ordinator)

177-230A ECOLOGY AND HUMAN SOCIETY. (3 credits; 3 hours lectures; Prerequisites: None). A course for students of all programs (except Ecology Majors) interested in an introduction to aspects of ecology and evolutionary biology which are important to current social and political issues. This course will be given in French and English in alternate years. The questions to be examined are chosen both for their importance to our society and because they lend themselves to dealing with major concepts in ecology and the problems encountered in practical applications.
Professor Boucher

• **177-246A MODERN BIOLOGY AND THE PREDICAMENT OF MAN.** (3 credits; 3 hours lectures or conferences). *Given in alternate years.* A critical discussion of fundamental concepts and theories of modern biology with emphasis on those aspects that are relevant to the human situation in our present society. Examples from molecular and organismal biology, sociobiology, ecology, and evolutionary biology. **NOTE:** This course has no prerequisites; it is designed for students in areas other than biology. Students in biology Honours and Major programs and in the Faculty program may take this course as an elective but may not use credit in this course towards meeting requirements of prescribed programs.
Professor Sattler

177-269A SOCIAL ISSUES IN BIOLOGY. (3 credits; 3 lectures per week; Prerequisites: none). The course deals with the scientific basis of issues frequently discussed in the public media. Those arising out of molecular biology and human genetics are emphasized: recombinant DNA, genetic engineering, cloning, human eugenics, etc. All necessary scientific background is included in the course.
Professor Southin and Staff

177-274A PRINCIPLES OF HUMAN GENETICS. (3 credits; 3 hours lectures, 1 hour seminar optional; Prerequisite: 177-112B or equivalent). The general principles of heredity taught with examples from man. (Not open to students who have taken or are taking 177-202B).
Professor Trasler and Staff

177-301A,B LABORATORY IN CELL AND MOLECULAR BIOLOGY (PART I). (3 credits; 1 lecture and one 6-hour laboratory per week; Prere-

quisites: 177-200A, -201B (or -201D). The topics covered are listed under Biology 302A,B. Students taking Biology 301A may choose parts (a) and (b) of any one section, plus (a) of either section 2 or 3. Students taking Biology 301B start with part (b) of either section 2 or 3, followed by parts (a) and (b) of any other section.
Professors Brown and Sinclair (Biology), and Wasserman (Biochemistry)

177-302A,B LABORATORY IN CELL AND MOLECULAR BIOLOGY (PART 2). (3 credits; 1 lecture and one 6-hour laboratory per week; Prerequisite: 177-301A,B). Students who wish to take a full year of laboratory work may do so by registering for 301A followed by 302B, or 301B followed by 302A. These students will complete all experiments listed below (though not necessarily in sequence).

Section 1

a) Isolation and purification of calf thymus DNA. Hydrolysis, chromatographic separation and spectrophotometric quantitation of the nitrogenous bases. Investigation of some physical properties of double stranded DNA. Centrifugal subcellular fractionation of homogenised rat liver. Determination of specific activity of organelle marker enzyme. Protein determination and brief enzymology.
b) Theory and practice of liquid scintillation counting. Sample preparation. Quenching of ^{3}H and ^{14}C by chemical and coloured agents. Cerenkov counting. The metabolism of ^{14}C glucose byrat adipose tissue and the effect of hormones on the synthesis of triglycerides and oxidation of glucose to CO_2. Chemical separation of radioactive products and their quantitation.

Section 2

a) Ionization, pH and electrophoresis. Photosynthesis in green algae and in-isolated chloroplasts. Isolation of mitochondria and study of electron transfer using oxygen electrodes. Spectrophotometry. Membrane potentials and ions.
b) Enzyme purification and assay. Protein measurement. Enzyme kinetics. Separation of proteins and estimation of molecular weight by gel filtration. Polyacrylamide gel electrophoresis.

Section 3

a) Microbial metabolism: control mechanisms and inhibition of macromolecular syntheses.
b) Microbial genetics: mutants of DNA synthesis and repair of DNA; chromosome mapping in bacteria; bacteriophage growth; genetic fine structure analysis; restriction enzyme mapping.

Professors Brown and Sinclair (Biology), and Wasserman (Biochemistry)

177-303A DEVELOPMENTAL BIOLOGY. (3 credits; 2 lectures and 2 hours discussion per week and 3 to 4 3-hour laboratories per term; Prerequisites: 177-200A and -201B (or -201D). A course designed to acquaint the student with the fundamental processes and principles operating during embryogenes is of both plants and animals. The developmental process will be considered at the molecular, cellular and organismal levels to give a total appreciation of developmental phenomena.
Professor Newrock

177-304A POPULATION ECOLOGY. (3 credits; 2 hours lectures; 3 hours laboratory. Prerequisite or corequisite: 177-205D or permission). The basic principles of population ecology, including descriptions of the techniques by which they can be formulated and tested. The first part of the course deals with processes within populations and leads to an exposition of the modern theories of population dynamics and population genetics. The second part deals with interactions between populations and concentrates on competition and predation.
Professor Bell

177-308B COMMUNITIES AND ENVIRONMENTS. (3 credits; 2 or 3 hours lectures per week, 1 hour conference every other week; Prerequisite or corequisite: 177-205D or permission). This course examines the relationships between ecological communities and their environments, focusing on the concepts of adaptation and community structure. Among the aspects of the environment to be considered are temperature, moisture, seasonality, predation, herbivory, competition and mutualism. (Not open to students who have taken 177-307B).
Professor Boucher

177-309A MATHEMATICAL MODELS IN BIOLOGY. (3 credits; 2½ hours lectures per week; Prerequisites: 189-231A,B, and elementary calculus or 189-222A,B or permission of instructor). Application of finite difference and differential equations to problems in cell and developmental biology, ecology and physiology. Qualitative, quantitative and graphical techniques are used to analyze mathematical models and to compare theoretical predictions with experimental data.
Professor Glass (Physiology Department)

177-310B GENERAL MOLECULAR GENETICS. (3 credits; 2 hours lectures, one period every week used for discussions; Prerequisites: 177-200A and -201B (or -201D). A survey of current topics in molecular genetics, including the replication, transcription and translation of nucleic acids and the regulation of these processes.
Professor Bussey

177-312A CELL GROWTH. (3 credits; 2 hours lectures, 1 hour conference; Prerequisites: 177-200A and -201B (or -201D). Molecular events, metabolism and control mechanisms in the growth and maturation of cell populations *in vivo* and *in vitro*. Molecular and organelle progression through the cell cycle. Models of cell growth.
Professor Sinclair

177-313B THE ULTRASTRUCTURAL BASIS OF CELL FUNCTION. (3 credits; 2 hours lecture, 3 hours seminar; Prerequisites: 177-200A and -201B (or -201D) and permission of the instructor). Recent developments in cell biology, with special emphasis on ultrastructural topics, will be discussed in depth.
Professor Gibbs

177-314A MOLECULAR BIOLOGY OF CANCER CELLS. (3 credits; 3 hours lectures per week, and three discussion sessions in the evenings; Prerequisites: 177-200A and -201B (or -201D). Molecular and genetic mechanisms of cell transformation by tumour viruses and chemical carcinogens will be analyzed in an attempt to understand the origin of human and animal cancers.
Professor Mukherjee

- **177-315A TOPICS IN PLANT CELL BIOPHYSICS AND BIOCHEMISTRY.** (3 credits; 3 hours lectures; Prerequisite: 177-200A and -201B (or -201D). The course will deal with areas of current research interests, including: photosynthetic and other light-evoked processes; electron, proton and ion transfer through membranes; hormone action; N_2-fixation; regulation of cell-surface glycoprotein and polysaccharide assembly, etc.
Professor Poole

177-316B PLANT GROWTH AND MORPHOGENESIS. (3 credits; 2 hours lectures and seminar; Prerequisite: 177-357A or permission of instructor). Physiological, biochemical and physiological-genetic approaches to the study of growth, differentiation and morphogenesis. Hormones and growth regulators, environmental control, physiology of reproduction, and other topics are discussed at a more advanced level than in 357A.
Professor Boll

- **177-318B PROBLEMS IN DEVELOPMENTAL BIOLOGY.** (3 credits; 2 hours lectures, 1 hour discussion; Prerequisite: 177-303A or permission of instructor). This course will cover the embryology, developmental genetics and molecular aspects of early development. Examples will include diverse systems, especially invertebrate and mammalian. The main topics will be the relationship of the events of oogenesis to early development; the establishment and maintenance of differential cell types; the biological implications of chromatin structure; the role of new gene activity in early development and the genetics of early development.
Professor Newrock

177-320B GENE ACTIVITY IN DEVELOPMENT. (3 credits; 2 hours lectures, 1 hour discussion; Prerequisite: 177-303A or permission of instructor). An assessment of the experimental work dealing with gene activity and its regulation during development. Topics: gene amplification; DNA, RNA, and protein synthesis during embryogenesis; nucleocytoplasmic interactions; hormones as regulators of gene activity and models of differentiation.
Professor Brandhorst

177-321A CYTOLOGY AND CYTOGENETICS. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisites: 177-200A and -201B (or -201D), -202B or -274A). The genetic apparatus, from molecules to chromosomes, is studied with respect to structure, behaviour and function. The main stress is on chromosomes of higher organisms, somatic and meiotic.
Professor Boothroyd

- **177-322A GENE STRUCTURE AND FUNCTION.** (3 credits; 2 hours lectures, 1 hour discussion or seminar; Prerequisites: 177-200A, -201B [or 201D] -202B or permission; 177-301A,B, -303A recommended). Characterization of gene structure and function in higher organisms (esp. fungi - Drosophila - mammals, incontrast to bacterial systems) based on recent findings from cloning of eukaryotic genes and from conventional genetic analysis. Topics: Types of DNA, their arrangement and function; genes, regulatory sequences and movable genetic elements; mutagenesis and DNA repair; directed mutation; expression of cloned genes and prospects for genetic manipulation.
Professor Käfer

177-323B TOPICS IN CYTOLOGY AND CYTOGENETICS. (2 credits; 2 hours seminar and discussion: Prerequisite: 177-321A or -368A). Selected topics incytology and cytogenetics will be considered in depth through students seminars and discussions, and occasional lectures.
Professor Boothroyd

177-325A PROCESSES IN EVOLUTIONARY ECOLOGY. (3 credits; 2½ hours lectures and 1/2 hour conference; Prerequisite: 177-205D, -202B or -274A; only one, either 177-325A or -372B can be taken for credit). Genetic properties and dynamics of natural populations with emphasis on qualitative traits. Models of population growth, mating systems, genetic variance, and types of natural selection.
Professor Sittmann

177-326B ECOLOGY OF SEX AND REPRODUCTION. (3 credits; 2 hours lectures; 1 hour conference; Prerequisite: 177-325A or permission). This course will attempt to develop explanations of the enormous variety of reproductive methods found in the animal and plant kingdoms. Topic headings: *Sex:* the nature of sexuality; theories of sex; a comparative critique of the theories; cyclical parthenogenesis; self-fertilization. *Gender:* sexual bipolarity; hermaphroditsm, sexual selection; sex ratio; breeding systems. *Life Cycles:* ploidy and the alternation of generations; dormancy and dispersal; fertilization and oviposition; parental care. *Reproduction:* the concept of the life history; suicidal reproduction; the age at maturity; the schedule of reproductive effort; reproduction in fluctuating environments; longevity and death.
Professor Bell

177-328B RESOURCE BIOLOGY. (3 credits; 2 hours lectures; 2 hours conference; Prerequisite: 177-304A or -308B). The management of biological resources will be examined at both the theoretical and practical level. Strategies for exploitation and control of natural populations are developed and discussed. The emphasis will be on quantitative analysis and the mathematical underpinnings of resource biology and management. Fisheries and pest management will be dealt with in detail.
Professor Roff

177-331G ECOLOGY FIELD COURSE. Preregistration in March. See course co-ordinator. A 12 day Field Course in late summer, with a comprehensive report to be prepared during the 'A' term. (3 credits; Prerequisites: 177-205D, and -304A or -308B). Methods of sampling natural populations of animal and plant species in fresh water and terrestrial habitats. Estimating population size from samples. Energy flow determinations, behavioural ecology.
Professor Kalff and Staff

177-334E FIELD COURSE IN APPLIED TROPICAL ECOLOGY. (3 credits; 2 weeks fieldwork and subsequent individual analysis of data; Prerequisites: 177-308B and permission of instructor). A two-week field course in early May, given at the Bellairs Research Institute in Barbados in collaboration with the University of the West Indies. Aspects of tropical ecology relevant to agriculture, forestry, fisheries and conservation of natural resources will be studied using a field-problem approach. A written report on the individual research project will be required. Limited to 10 McGill students.
Staff

177-340A VERTEBRATE FUNCTIONAL MORPHOLOGY. (3 credits; 2 hours lectures and 3 hours laboratory; Prerequisite: 177-205D, -206D). Study of the anatomy of the major groups of vertebrates: jawless, cartilaginous and bonyfish, amphibians, reptiles, birds and mammals. Consideration of the basic pattern of tissues, organs and organ systems, and their modification in response to adaptation toward various ways of life. Emphasis will be placed on the function and interrelationship of the nervous, skeletal, muscular, urogenital, circulatory and endocrine systems.
Professor Carroll

177-345A PARASITISM AND SYMBIOSIS. (3 credits; 2 hours lectures per week and eight 3-hour laboratories; Prerequisite: 177-205D). The biology of parasites and other symbiotic organisms is presented within a framework of contemporary ecological concepts. Evolution of the different forms of symbiosis is discussed in relation to the life cycle patterns that characterize the major taxonomic groups involved. Dynamic properties of the hostparasite relationship are developed with reference to current models, giving special attention to the parasites and symbionts of fish and wildlife populations. The course is concluded by considering the impact of parasites and other symbionts on the food web structure of an ecosystem.
Professor Curtis

177-346A PHILOSOPHIE DE LA BIOLOGIE. (3 crédits; 3 heures de cours ou séminaires; prérequis: un cours de biologie générale). Une introduction aux fondements philosophiques de la biologie. Leur importance dans la recherche et face aux théories se rapportant aux diverses disciplines biologiques.
Professor Sattler

- **177-347B HISTORY OF BIOLOGY.** (3 credits; 3 hours lectures; Prerequisite: Any introductory biology course). *Given inalternate years.* The development of scientific observation and measurement in plant and animal anatomy, comparative morphology, ecology, embryology, physiology and palaeontology. Theories of the relationships of living organisms, their parts and their evolution. Biological expeditions, societies and journals.
Professor Dunbar

- **177-348D THE BIOLOGY OF INVERTEBRATES.** (6 credits; 2 hours lectures and 3 hours laboratory; Prerequisites: 177-205D, -206D). A survey course of the invertebrate groups (with the exception of terrestrial arthropods) stressing comparative morphology, functional anatomy and relationships between major taxa.
Professor Reiswig

177-349A BIOLOGY OF FISHES. (3 credits; 2 lectures per week plus one week field trip during term (compulsory); Prerequisites: 177-205D, -206D and permission of instructor). An advanced course on the biology of fishes with emphasis on their ecology, behavior, and adaptation to specific environments.
Professor Leggett

177-350A GENERAL ENTOMOLOGY. (3 credits). Each student plans, in consultation with the instructor, a program from a wide range of modules. The lectures and modules are designed to introduce insect structure, physiology, development, systematics, evolution, ecology and control. The course stresses interrelationships, integrated pest control and information storage and retrieval. (Minimum enrolment 15 students). (Not open to students who have taken 350-330).
Professors Stewart and Staff (Entomology Department)

177-351B BIOLOGY OF MAMMALS. (3 credits; 2 lectures and 1 laboratory per week; Prerequisite: 177-205D and -206D or permission of instructor). Biology of mammals; principles of adaptation in behaviour, structure and phlysiology to aerial, terrestrial and marine habitats. Outlines of distribution, ecology and conservation of mammals. Laboratory work will include dissections and demonstrations.
Professor Digby

177-352B VERTEBRATE EVOLUTION. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisites: 177-340A or permission of instructor). The origin and evolution of the major groups of vertebrates; their anatomy, phylogeny and zoogeography. Structural, behavioral and physiological adaptations to different environments and energetic requirements. Evolutionary theory as applied to major events in the history of vertebrates; the origin and radiation of major taxa, patterns and rates of evolution.
Professor Carroll

- **177-354B BIOLOGY OF BIRDS.** (3 credits; 2 hours lectures and 3 hours laboratory; Prerequisite: 177-205D, and -206D recommended). A course emphasizing the adaptations of birds to their peculiar mode of life, including aspects of anatomy, plumages, behaviour (migration, flight, displays, vocalizations). Introduction to local and world avifaunas. Laboratory exercises and spring field trips.
Professors Lemon and Staff

177-355A DYNAMICS OF PLANT STRUCTURE. (3 credits; 2 hours lectures. 3 hours laboratory; Prerequisites: Introductory biology course or permission of instructor). An introduction to the general organization and development of vegetative and reproductive plant cells, tissues and organs. Emphasis is placed on plants that are of economic importance and used in experimental biology.
Professor Sattler

177-357A PLANT PHYSIOLOGY. (3 credits; 2 hours lectures, 3 hours laboratory or 1-2 hours conference. Prerequisites: 177-200A and -201B (or -201D). Topics include water relations, nutrition, respiration and photosynthesis, nitrogen fixation, transport of solutes, growth and development, and movement.
Professor Boll

- **177-358B EVOLUTIONARY PERSPECTIVES ON THE CANADIAN FLORA.** (3 credits; 2 hours lectures, 3 hours laboratory. Prerequisite: 177-205D or permission of instructor). Practical training in plant identification combined with discussions on the evolutionary biology of selected plant species.
Professor Lechowicz

177-359B BIOLOGY OF ALGAE. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisite: 177-205D or permission of instructor). A systematic survey of the major classes of the algae which emphasizes their diversity in form and function, ecological significance in the aquatic environment, and importance to man.
Professor Goldstein

- **177-362B BIOLOGY OF THE FUNGI.** (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisite: Introductory course in Biology). A systematic survey of the major classes of fungi and lichens which emphasizes their diversity in form and function, ecological significance in the aquatic and terrestrial environments, and importance to man.
Professor Goldstein

177-364B PLANTS AND MAN. (3 credits; 2 hours lectures; 3 hours laboratory; Prerequisite: Introductory course in Biology). Man's dependence upon, and economic and cultural interest in plants and plant products. The origins of agriculture and the origin, evolution, use and dispersal of food, drug and other economic plants, both cultivated and wild.
Professor Boll

177-366B GENETIC SYSTEMS IN HIGHER PLANTS. (3 credits; 3 hours lectures, some replaced by conferences; Prerequisite: 177-200A and -201B (or -201D), -202B (or -274A), plus -373A, or permission of instructor). A survey of breeding/reproductive systems in higher plants, with detailed examination of methods for genetic analysis of both qualitative and quantitative characteristics. The potential value of genetic manipulation in producing new plant populations is also examined.
Professor Tyson

177-368A SOMATIC CELL GENETICS. (3 credits; 2 hours lectures and one 1-hour discussion per week; Prerequisite 177-200A and -201B (or -201D). This course deals with the use of somatic animal cells in culture for various genetic analyses and for understanding the molecular mechanisms of human diseases.
Professors Nishioka/Pinsky and Rosenblatt

177-370B HUMAN GENETICS IN PRACTICE. (3 credits; 3 hours lectures; one hour conference optional; Prerequisites: 177-200A and -201B (or

-201D), -202B or -274A, or permission). A contemporary view of what genetics can do when applied to man, and the practical, ethical and moral issues raised by recent advances.
Staff

177-372B POPULATION GENETICS. (3 credits; 2½ hours lectures and ½ hour conference; Prerequisite: 177-202B or -274A, -205D; -373A recommended). Topics include Hardy-Weinberg equilibrium in random mating populations, inbreeding coefficient and rate of gene loss, separation of phenotypic variation into genetic and environmental components, correlated characters, genotype and environment interaction.
Professors Sittmann and Tyson

177-373A BIOMETRY. (3 credits; 2 hours lectures, 2 hours laboratory, Prerequisite: 189-112A,B or the equivalent). Elementary statistical methods for testing hypotheses and designing experiments in biology. Least squares procedures for fitting models in regression and analysis of variance. Students who have, or are taking, certain equivalent statistical courses elsewhere in the University, for example, 204-204A,B, may not take this course. A list of these equivalent courses is available in the Biology Department's Handbook.
Professor Tyson and Dr. Fieldes

177-377E INDEPENDENT STUDIES IN BIOLOGY. (3 credits; Open to U2 or U3 students only; preference given to Biology students; only one of 377E, 477A, 478B,E may be used to satisfy course requirements in Biology Majors or Faculty Programs; Prerequisite: 177-301A,B or -302A,B or other 300-level laboratory course. Projects to be arranged individually with instructors and a form from room W4/7, Stewart Building, must be completed to enrol). Research (or reading) projects, permitting independent study under the guidance of a staff member in the Biology Department specializing in the field of interest. A written report is required and a copy has to be submitted with the mark to the departmental office before fall registration.
Staff

177-384A PHYSIOLOGY OF MARINE ORGANISMS. (3 credits; 2 lectures and 1 laboratory per week; Prerequisites: 177-205D, -206D or permission of instructor). General physiology, mainly of marine organisms, with special reference to the physiological background of life in the sea, and in fresh waters, and to the consequences of a marine history on the physiology of animal life.
Professor Digby

177-386A CELLULAR NEUROBIOLOGY (3 credits; 3 hours lectures; Prerequisite: 177-200A and -201B (or -201D) or 177-205D or permission of instructor). Principles of nervous excitability and synaptic transmission. Comparative survey of muscle. Neural networks. Introduction to sensory transduction and coding.
Professors Chase and Pasztor

177-387B INTEGRATIVE NEUROBIOLOGY. (3 credits; 3 hours lectures; Prerequisite: 177-386A or 552-211D or 204-308D or permission of instructor). Integrative networks within nervous systems. Central motor programs in simple nervous systems. Neural processing of sensory information. Cellular strategies for the study of learning and memory.
Professors Pasztor and Chase

177-389B LABORATORY IN NEUROBIOLOGY. (3 credits; 1 hour lecture; 5 hours laboratory; Prerequisites: 177-386A; and, if other than Neurobiology Major, permission of instructor). Provides experience in the methods of neurobiological research; experiments include extracellular and intracellular recording from nerve cells, electrical stimulation, and the study of neuro-behavioural problems.
Professor Pollack

177-391A ANIMAL BEHAVIOUR. (3 credits; 2 hours lectures plus conference; Prerequisites: 177-205D, or permission of instructor). The study of the evolution, function and mechanisms behind animal behaviour.
Professor Lefebvre

177-392B SOCIOBIOLOGY. (3 credits; 2 hours lectures, plus tutorial; Prerequisites: 177-205D or permission of instructor.) An evolutionary approach to the study of social organization and behaviour. Emphasis is on natural behaviour patterns and their adaptive significance in animals including humans.
Professor Kramer

177-394B LABORATORY IN ETHOLOGY. (3 credits; Prerequisites; 177-391A or -392B and permissionof instructor). A series of laboratory projects emphasizing experimental design, methodology and preparation of scientific reports in the field of animal behaviour. May include both field and laboratory studies. Primarily for senior students enrolled in the Animal Behaviour Major Program, intending to pursue postgraduate studies.
Professors Kramer and Lefebvre

- **177-411B RESEARCH PROJECT IN MEMBRANE TRANSPORT.** (3 credits; 5 hours laboratory, 1½ hours seminar; Prerequisite: 177-301A,B and permission of instructor). Laboratory projects in which students participate in defining the objectives, and in the planning and design of experiments.
Professor Poole

177-417B DEVELOPMENTAL MAMMALIAN GENETICS. (3 credits; lectures and seminars; Prerequisites: 180-203A or -204A,B; -222A,B; 177-202B or -274A, -303A, -310B; -372B recommended; permission of instructor required). An advanced course for final year students where the main emphasis will be on experiments where gene differences altering development or environmentally-induced differences in em-

bryonic development throw light on the processes of normal mammalian development.
Professor Trasler

- **177-429B PHYSIOLOGICAL ECOLOGY OF PLANT REPRODUCTION.** (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisite: 177-205D; -308B). An advanced consideration of the structural and physiological adaptations of plants to their environment with emphasis on reproduction. The laboratory introduces students to the measurement of relevant phlysiological and micro-environmental parameters.
Professor Lechowicz

177-432A LIMNOLOGY. (3 credits; 2 hours lectures; 3 hours laboratory; Prerequisite: 177-205D, -206D or permission of instructor). A study of the physical, chemical and biological properties of fresh-water, with emphasis on nutrient cycling and energy flow in lakes.
Professor Kalff

177-433D PREDICTIVE ECOLOGY. (3 credits; 1 hour lecture, 1 hour seminar or research; Prerequisite: 177-308B or -304A or permission of instructor). An introduction to empirical ecology stressing the observed relations among ecological variables as the necessary basis for applied ecology. Lectures given in the early part of the year provide a necessary background for the pursuit of a major program of library research plus a set of seminars and consultations. (Not open to students who have taken 177-385B).
Professor Peters

177-442D BIOLOGICAL OCEANOGRAPHY. (6 credits; 3 hours lectures, several 3 hour laboratory periods; Pre- or Corequisites: 177-308B, -348D). An introduction to the physical and chemical factors of the marine environment, the ecological divisions of the ocean, history and methods of marine research. An ecological accountof marine populations in relation to their physical and chemical environment; marine plankton and production processes, marine pollution.
Professors Lewis, Dunbar and Marcotte (Oceanography)

177-471A HUMAN BIOCHEMICAL GENETICS: INTERMEDIARY METABOLISM. (3 credits; 3 hours lectures; Prerequisites: 177-200A and -201B (or -201D), -274A or -202B). This course will explore the biochemical basis of human individuality by the study of mutations affecting the metabolism and transport of small molecules. (Given in alternate years. Not open to students who took 177-476B in 1980 or before).
Professors Hechtman (Co-ordinator), and Staff

- **177-476B HUMAN BIOCHEMICAL GENETICS: MACROMOLECULES.** (3 credits; 3 hours lectures; Prerequisites: 177-200A and -201B (or -201D), -274A or -202B). This course will explore the biochemical basis of human individuality by the study of mutations affecting the structure and function of macromolecules such as haemoglobin, collagen, receptor and transport proteins. (Given in alternate years).
Professors Hechtman (Co-ordinator), and Staff

177-477A/478B,E INDEPENDENT STUDIES IN BIOLOGY. (3 credits each; open to U2 and U3 students only; Preference given to Biology students. Prerequisite: 177-301A,B or other suitable laboratory course. Projects have to be arranged individually with instructors *and a form from Room W4/7, Stewart Building, must be completed to enrol).* Research or reading projects, permitting independent study under the guidance of a staff member in the Biology Department specializing in the field of interest. A written report is required and a copy must be submitted with the mark to the departmental office.
Staff

177-479D,G INDEPENDENT STUDIES IN BIOLOGY. (9 credits; 8-12 hours per week research project and related seminars; Prerequisites: restricted to U3 students in Biology Honours Program; projects must be arranged individually with and accepted by instructors). A written proposal outlining the studies to be undertaken must be submitted to the Biology Curriculum Committee by early summer (May 31) after the U2 year. The proposal will be reviewed by a committee composed of two instructors in the student's field of study plus one from the Curriculum Committee. Notice of the Committee's decision will be forwarded by mail during the summer. A program of study designed to provide an introduction to the design, execution and reporting of research. The number of projects that can be handled is limited and their quality will be examined carefully. Proposals should therefore be considered as competitive.
Staff

177-480D,G INDEPENDENT STUDIES IN BIOLOGY. (12 credits; 10-15 hours per week research project and related seminars; Prerequisites and course descriptions: As for 177-479D,G above).
Staff

177-493B UNDERGRADUATE SEMINAR IN ANIMAL BEHAVIOUR. (3 credits; 4 hours seminar; Prerequisite: Permission of instructor). A senior course considering in depth topics of current interest, which may range from physiological to ecological aspects of behaviour according to the interest of the class.
Professor Lefebvre

177-499D HONOURS SEMINAR IN BIOLOGY. (4 credits; weekly seminars). Honours students in Biology will attend a selected series of guest speaker seminars of general interest, and participate in discussions led by the speaker. In addition, groups of students will participate in a chosen series of specialized seminars and present approximately 2 seminars.
Professor Goldstein (Co-ordinator), and Staff

177-500C ADVANCED TECHNIQUES IN CELL AND MOLECULAR BIOLOGY. (4 credits; 1 lecture and 6-8 hours laboratory per day during a 4 week summer session; Prerequisites: 177-301A,B, -302A,B and permission of the instructor). This course is intended for selected cell and molecular biology honours and graduate students. (Restricted enrolment). Techniques used are those involved in molecular studies of transcriptional and translational regulation in eucaryotic cells, e.g., nucleic acid and protein synthesis *in vitro*, nucleic acid hybridization, and molecular cloning and characterization of specific genes.
Professor Verma

177-524B TOPICS IN MOLECULAR BIOLOGY. (3 credits; Preequisites: 177-200A and -201B (or -201D), -303A and one of -310B, -318B, -320B, or -322A; or permission of instructor). This seminar course will consider the most recent literature in the fields of molecular genetics and molecular biology of development. The main topics will include gene structure and the regulation of gene expression in eucaryotic organisms, especially during cellular differentiation.
Professors Käfer, Newrock and Staff

177-565B SEMINAR IN PLANT BIOLOGY. (3 credits: 2 hours seminar; Preequisite: For advanced undergraduates and graduate students, with permission of instructor). A seminar focussing on a diferent theme related to the evolutionary biology of plants each year. Among the themes to be considered are nitrogen metabolism, reproductive biology, regulation of plant productivity, and photosynthesis. An evolutionary perspective will be used to integrate the molecular, genetic, physiological and ecological aspects of the theme. Emphasis will be placed on recent advances in the field and analysis of primary sources.
Professor Boucher and Staff

177-575A ADVANCES IN POPULATION GENETICS. (3 credits; one conference/seminar per week; Prerequisites: 177-373A, -325A or -372B). *Given in alternate years.* Discussion of recent advances in genetics relevant to population biologists in ecology and human genetics.
Professors Sittmann and Tyson

177-587B DEVELOPMENTAL NEUROBIOLOGY. (3 credits; 3 hours lectures; Prerequisite: 177-386A or -303A or 204-308D or 552-211D). Examination of the origin, development and maintenance of nerve cells and nervous systems.
Professor Levine

177-588A NEUROBIOLOGY SEMINAR. (3 credits; two 1-hour seminars; Prerequisite: 177-386A and 177-387B or permission of instructor). A seminar providing in-depth study of a selected topic in neurobiology. The topic chosen will reflect some area of current research activity as well as subject matter complimentary to the rest of the neurobiology program. Emphasis is placed on the development of verbal skills in scientific communication and critical evaluation of original research papers.
Professor Marsden and Staff

- **177-595A ADVANCED SEMINAR IN BEHAVIOUR.** (3 credits; 2 hour seminars; Prerequisites: 177-391A or -392B or equivalent and permission of instructor). *Given in alternate years.* A graduate level seminar concerned with animal behaviour. Selected topics include sensory mechanisms of communication, social behaviour and organization, animal orientation, physiological correlates of behaviour, and the sequential and temporal organizationof behaviour. The emphasis will be on studies having a zoological perspective.
Professors Lemon and Pollack

- **177-596A SEMINAR IN BEHAVIOURAL ECOLOGY.** (3 credits; Prerequisite: permission of instructor). *Given in alternate years.* A graduate level seminar course concerned with ecological and evolutionary perspectives on behaviour. Potential topics include aspects of altruism, grouping, mating systems, feeding strategies, antipredator behaviour, habitat selection and the inheritance of behaviour.
Professors Bell and Lemon

BIOMEDICAL ENGINEERING (399)

399-551B FLUID MECHANICAL ASPECTS OF RESPIRATORY PHYSIOLOGY. (3 credits; Prerequisite: Permission of the instructor). Fundamentals of fluid mechanics and essentials of respiratory physiology will be reviewed as part I of the course. In part II, topics covered include: air flow pattern in the tracheobronchial tree; gas mixing in the lung; ventilation distribution; distribution of airway resistance; expiratory flow limitation; pulmonary blood flow; lung fluid balance.
Professor Chang

CHEMISTRY (180)

Professors - M. ONYSZCHUK *(Chairman);* B. BELLEAU; I.S. BUTLER; T.H. CHAN; J.T. EDWARD; A. EISENBERG; B.C. EU; P.G. FARRELL; D.F.R. GILSON; D.N. HARPP; J.F. HARROD; J.J. HOGAN; G. JUST; S.G. MASON; K.K. OGILVIE; D. PATTERSON; A.S. PERLIN; W.C. PURDY; L.E. ST.PIERRE; M.A. WHITEHEAD; L. YAFFE

Emeritus Professors - G.C.B. CAVE; A. TAURINS

Associate Professors - J.M. FRESCO; W.C. GALLEY; A.E. GROSSER; B.C. SANCTUARY; A.G. SHAVER; D.J. SIMKIN

Assistant Professor – E.D. SALIN
Associate Members – M. DIKSIC *(Neurology and Neurosurgery);* G. DONNAY *(Crystal Chemistry);* H. GOLDSMITH *(Medicine);* M. KING *(Medicine);* O.A. MAMER *(University Clinic)*
Senior Research Associate – D.A.I. GORING
Research Associates – H. BOLKER; G.R. BROWN; D.G. GRAY; R. ST. JOHN MANLEY; A.A. ROBERTSON; T.G.M. VAN DE VEN
Faculty Lecturers – G.R. BROWN; J. FINKENBINE

Otto Maass Chemistry Building,
801 Sherbrooke St. West,
Montreal, PQ, H3A 2K6;
Departmental Office,
Room 322, Telephone: 392-4469;
Student Advisory Office,
Room 4, Telephone: 392-8086.

Chemistry is both a pure science, offering its students a challenging intellectual pursuit and, simultaneously, an applied science whose technology is of fundamental importance to our economy and society. The modern chemist seeks an understanding of the structure and properties of atoms and molecules. This knowledge is used to predict and interpret the properties and transformations of matter and the energy changes that accompany those transformations. Many of the concepts of Physics and the methods of Mathematics are basic to Chemistry, while Chemistry is in turn of fundamental importance to many other disciplines such as: the Biological and Medical Sciences, Geology, Metallurgy, etc.

A degree in Chemistry can lead to a wide variety of professional vocations. The large science-based industries (petroleum refining, plastics, pharmaceuticals, etc.) all employ chemists in research and development and in quality control. Many federal and provincial departments and agencies employ chemists in research and testing laboratories. Such positions are expected to increase with the currently growing concern for the environment and for consumer protection. A background in chemistry is also useful as a basis for advanced study in other related fields, such as medicine and the biological sciences. For a business career, a B.Sc. in Chemistry can profitably be combined with a master's degree in Business Administration.

Chemistry courses at the university level are traditionally divided into four areas of specialization: 1) organic chemistry, dealing with the compounds of carbon; 2) inorganic chemistry, concerned with the chemistry and compounds of elements other than carbon; 3) analytical chemistry, which deals with the identification of substances and the quantitative measurement of their compositions; and 4) physical chemistry, which treats the physical laws and energetics governing chemical reactions. Naturally there is a great deal of overlap between these different areas, and the boundaries are becoming increasingly blurred. After a general course at the collegial level, courses in organic, inorganic, analytical and physical chemistry are offered through the university years. Since chemistry is an experimental science, laboratory classes accompany most undergraduate courses. In addition, courses are offered in polymer, nuclear, radio and biological chemistry to upper year undergraduates.

There are two main programs in Chemistry, Honours and Major. The Honours program is intended primarily for students wishing to pursue graduate studies in Chemistry. While the Major program is somewhat less specialized, it is still recognized as sufficient training for a profession in Chemistry. It can also lead to graduate studies although an additional qualifying year may be necessary. There are also a number of Faculty programs available (see page 157). Interest students may inquire about these at the Student Advisory Office.

CORE CURRICULUM IN CHEMISTRY

The Core Curriculum in Chemistry consists of 66 credits in Chemistry, Physics and Mathematics, listed below. The courses marked with an asterisk (*) are omitted from the program of students who have successfully completed them at the CEGEP level but the Chemistry courses must be replaced by courses in that discipline if students wish to be eligible for admission to the Ordre des Chimistes. Courses marked with two asterisks (**) may also be omitted from the program on the basis of successfully completed CEGEP courses, upon approval of the academic adviser. (CEGEP/McGill equivalents are listed below). Students from outside Québec or transfer students should consult the academic adviser.

200 – Level Courses

Chemistry: 180-212A,B* (4 credits); -222A,B* (4 credits; -213A,B (3 credits); -255A,B (3 credits); -273A (1 credit); -281A,B (3 credits); -257D (4 credits)

Physics: 198-241A,B (3 credits); -242A,B (2 credits)

Mathematics: 189-222A,B* (3 credits); -223A** (3 credits);

Computer Science: 308-200A,B* (3 credits)

300 – Level Courses

Chemistry: 180-302A,B (3 credits); -382A,B (3 credits); -345A (3 credits); -355B (3 credits); -353A (1 credit); -363A,B (2 credits); -393A,B (2 credits); -387D (4 credits); -381A (3 credits); -392A,B,D (3 credits)

Mathematics: 189-315A,B (3 credits)

McGill/CEGEP Equivalents:

McGill	CEGEP
* 180-212A,B	202-202 (Organic I)
* 180-222A,B	202-302 (Organic II)
* 189-222A,B	201-301 (Calculus III)
** 189-223A,B	consult adviser
* 308-200A,B	consult adviser

HONOURS PROGRAM IN CHEMISTRY

The Honours Program in Chemistry is the Core Curriculum, normally taken in U1 and U2, and an additional 18 credits in Chemistry. Chemistry 180-456 (3 credits) and 6 credits of laboratory chemistry (6 credits of research project or 6 credits of advanced laboratory courses) must be included in the 18 required U3 credits. The remaining 9 credits may be selected from the U3 honours courses and any 500 level courses numbered between 550 and 599 inclusive. Physics 198-465D, Mathematical Physics for Chemists, is acceptable as 4 of these credits. Admission to the Honours program is by application to the Chemistry Department.

MAJOR IN CHEMISTRY

The Major in Chemistry is the Core Curriculum taken over the three university years. All courses chosen outside the Core Curriculum will be free electives. Students intending to major in Chemistry may, on application to the Department, be granted permission to take U3 Honours courses in Chemistry as part of their electives. Admission to the Major program is by application to the Chemistry Department.

FACULTY PROGRAMS IN CHEMISTRY

Faculty programs in Chemistry are constructed from the U1 courses and the general courses of U2 and U3 intended for these students. (See beginning of Science section).

Course Descriptions

• *Denotes not offered 1982-83.*

180-110B GENERAL CHEMISTRY. (3 credits: 3 lectures, Prerequisites/Corequisites: College level mathematics and physics or permission of instructor; 180-120A is not a prerequisite). A study of the fundamental principles of atomic structure, valence theory and periodic table.
Professor Hogan

Laboratory: (2 hours). Illustrative experiments.
Staff

180-120A GENERAL CHEMISTRY. (3 credits; 3 lectures; Prerequisites/corequisites: College level mathematics and physics, or permission of instructor: 180-110B is not a prerequisite). A study of the fundamental principles of physical chemistry.
Professor Grosser

Laboratory: (2 hours). Illustrative experiments.
Staff

180-150A,B CHEMISTRY IN THE MODERN WORLD. (3 credits; 3 lectures; no prerequisites). The course is a series of lectures on the historical, practical, and simple chemical aspects of: food, food additives; vitamins; water (use, pollution, acid rain); energy, the automobile; air pollution; plastics, drugs (history, over-the-counter, street drugs); cosmetics; household chemistry; photography; forensic chemistry; war chemistry; research funding and publishing. Extensive use will be made of visual aids (slides and demonstrations).
Professor Harpp

180-201A MODERN INORGANIC CHEMISTRY I. (3 credits; 3 lectures, Prerequisites: 180-110B and 120A or equivalent; Not open to Honours or Majors in chemistry). Chemistry of the main group elements. Basic concepts of electronic structure, bonding and structure will be developed and applied to the understanding of common materials. Emphasis will be placed on elements such as oxygen, nitrogen, silicon and others in order to understand their role in our everyday lives. Chemistry of many technological and biological applications of the main group elements.
Professor Onyszchuk

180-203A A SURVEY OF PHYSICAL CHEMISTRY. (3 credits; 3 lectures; Prerequisites: 180-110B, 180-120A or equivalent. This course is intended for students in biological science programs requiring only one course in physical chemistry). Gases, ideal and real. The laws of thermodynamics. Free Energy and Equilibrium. Multicomponent Systems (solutions). Equilibrium and Chemical Reactions. Chemical Kinetics. Macromolecules. Photochemistry. Electrochemistry. (Not open to students who have taken or are taking 180-204 or 180-213).
Professor Patterson

180-204A,B INTRODUCTORY PHYSICAL CHEMISTRY FOR BIOLOGICAL SCIENCE STUDENTS I. (3 credits; 3 lectures; Prerequisites: 180-110B and 180-120A or equivalent and one full course in calculus). Similar to 180-213A,B. An emphasis is placed on the use of biological examples to illustrate the principles of Physical Chemistry. The relevance of physical chemistry to biology is stressed. (Not open to students who have taken or are taking 180-203 or 180-213).
Professor Gilson

180-212A,B INTRODUCTORY ORGANIC CHEMISTRY I. (4 credits; 3 lectures; Prerequisites: 180-110B and 120A or equivalent courses). A survey of reactions of aliphatic and aromatic compounds including modern concepts of bon-

ding, mechanisms, conformation analysis, and stereochemistry.
Professors Perlin (A) and Farrell (B)

Laboratory: (3 hours). Illustrative experiments.
Professors Perlin (A) and Farrell (B)

180-213A,B INTRODUCTORY PHYSICAL CHEMISTRY I. (3 credits; 3 lectures; Prerequisites: 180-110B and 180-120A or equivalent; Mathematics 189-120 and 121 or equivalent). Gas laws, kinetic theory. First law of thermodynamics, enthalply, thermochemistry, bond energies. Second law of thermodynamics; the entropy and the free energy functions. Chemical and thermodynamic equilibrium states. Phase rule. Colligative properties of ideal solutions. Selected special topics which may include chemical kinetics, electrochemistry and others. (Not open to students who have taken or are taking 180-203 or 180-204).
Professor Eisenberg

180-214B INTRODUCTORY PHYSICAL CHEMISTRY FOR BIOLOGICAL SCIENCE STUDENTS II. (3 credits; 3 lectures; Prerequisites: 180-213A,B or 180-204A or equivalent). Emphasis is placed on the use of biological examples to illustrate the principles of physical chemistry. The relevance of physical chemistry to biology is stressed.
Professor Eisenberg

180-217A,B GENERAL ANALYTICAL CHEMISTRY LABORATORYI. (1 credit; 3 hours; Prerequisites: 180-110B and 120A or equivalents). Laboratory portion of an individualized program in analytical chemistry.
Professor Purdy

180-222A,B INTRODUCTORY ORGANIC CHEMISTRY II. (4 credits; 3 lectures; Prerequisite: 180-212A). Modern spectroscopic techniques for structure determination. The chemistry of alkyl halides, alcohols, ethers, carbonyl compounds and amines with special attention to mechanistic aspects. Special topics.
Professors Harpp (A) and Perlin (B)

Laboratory: (3 hours). Illustrative experiments.
Professors Harpp (A) and Perlin (B)

180-237B GENERAL ANALYTICAL CHEMISTRY LABORATORY II. (1 credit; 3 hours; Prerequisites: 180-217A,B). Laboratory portion of an individualized program in analytical chemistry.
Professor Purdy

180-255A,B INTRODUCTORY PHYSICAL CHEMISTRY II. (3 credits; 3 lectures; Prerequisite: 180-213A,B; Corequisite: 189-222A,B; for Honours and Majors only). First and second laws of thermodynamics; criteria of spontaneity and thermodynamic functions; chemical potential; Maxwell and other relations; homogeneous and heterogeneous mixtures; partial molal properties; fugacity, activity of solutions of electrolytes and Debye-Hückel theory; electrochemical cells. Transport properties, macromolecules. (Not open to students who have taken 180-253 or 180-313).
Professor Patterson

180-257D INTRODUCTORY ANALYTICAL CHEMISTRY. (4 credits; 1 lecture, 1 homework tutorial and 4 hours laboratory; Prerequisites: 180-110B and 180-120A or equivalent; open to Chemistry Honours and Majors, others with permission). A survey of analytical chemistry including the theory and practice of representative gravimetric, volumetric and instrumental methods.
Professor Purdy

180-273A CHEMICAL KINETICS. (1 credit; 1 lecture; prerequisite: 180-110B and 120A, or equivalent). For Honours and Major Chemistry students. Other students with permission of the lecturer. Order, molecularity, reaction mechanisms and rate constants. Determination of order, effect of temperature on rate, activated state theory. Collision theory. Reactions in solution, homogeneous catalysis, upper atmosphere kinetics, drug kinetics.
Professor Simkin

180-281A,B CHEMISTRY OF THE MAIN GROUP ELEMENTS. (3 credits; 3 lectures; Prerequisites: 180-110A and 120B or equivalents). For Honours and Major Chemistry students. Current theories of atomic structure, chemical bonding and stereochemistry are reviewed and then applied in a systematic survey of the main group elements and their compounds, with emphasis on trends in physical and chemical properties, molecular and ionic geometries, and mechanisms of reactions.
Professor Onyszchuk

180-301B MODERN INORGANIC CHEMISTRY II. (3 credits; 3 lectures; Prerequisites: 180-110B and 120A or equivalent). The chemistry of the transition metals will be reviewed and the properties of coordination compounds will be considered from the viewpoint of structural, bonding, chemical, mechanistic and spectroscopic behaviour. The biochemical and pollution aspects of transition metal chemistry will also be discussed.
Professor Yaffe

180-302A,B INTRODUCTORY ORGANIC CHEMISTRY III, POLYFUNCTIONAL AND BIOMOLECULES. (3 credits; 3 lectures; Prerequisites: 180-212A and 222A,B). Application of the concepts or organic chemistry to selected systems, including aromatics and heterocyclics, carbanions, rearrangements, molecular orbital considerations, polymers and biomolecules.
Professors Edward and Chan

180-307B THE ANALYTICAL CHEMISTRY OF POLLUTANTS. (2 credits; 2 lectures; Prerequisites: One course in analytical chemistry and one in physical chemistry). Description of current analytical practices in air and water pollution;

critical evaluation of the reliability of the methods, with particular emphasis on interfering substances; rudiments of automated instrumentation; toxicological analysis as it relates to pollution.
Professor Fresco

180-313A INTERMEDIATE PHYSICAL CHEMISTRY I. (3 credits; 3 lectures; Prerequisite: 180-213A,B or 204A,B). A survey course in physical chemistry beyond the introductory level. (Not open to students who have taken 180-255A,B).
Professor Patterson

180-331A INORGANIC CHEMISTRY OF THE SOLID STATE. (3 credits; 3 lectures; Prerequisites: 180-110B and 120A or equivalents). Primarily, but not exclusively, for students in the Faculty of Engineering. Electronic structure and properties of the elements in relation to the Periodic Table. The Solid state: structure, bonding, magnetic properties of metals and alloys. Descriptive chemistry of the metals.
Professor Hogan

180-345A MOLECULAR PROPERTIES AND STRUCTURE, I. Quantum Chemistry. (3 credits; 3 lectures; Prerequisites: 180-213A,B, 180-255A,B; Corequisite: 189-222A,B). For Chemistry Honours and Majors only. An introduction to quantum chemistry covering the historical development, wave theory, methods of quantum mechanics, and applications of quantum chemistry.
Professor Eu

180-352B STRUCTURAL ORGANIC CHEMISTRY. (3 credits; 3 lectures; Prerequisite: 180-302A,B). For Honours and Major Chemistry students. Modern methods of structure determination, employing spectroscopic techniques; stereochemistry.
Professor Chan

180-353A SURFACE CHEMISTRY. (1 credit; 1 lecture; Preequisites: 180-253B, 255A,B and 273A). For Honours and Major Chemistry students. The nature of surfaces. The thermodynamics of surfaces. The effect of temperature and pressure on surface energies. The wetting of solids. Binary liquid systems and the surface excess. Physi- and chemisorption of vapours on solids.

180-355B MOLECULAR PROPERTIES AND STRUCTURE II. Spectroscopy and Statistical Mechanics (3 credits; 3 lectures; Preequisite: 180-345A). A survey of the principles of electronic, vibrational and rotational spectroscopy. Magnetic resonance methods. The application of statistical mechanical methods to chemistry.
Professor Galley

180-362A,B ADVANCED ORGANIC LABORATORY. (2 credits; 4 hours; Prerequisite or corequisite: 180-302A,B). An advanced laboratory with experiments related to the theoretical principles and synthetic methods of modern organic chemistry.
Professor Edward and Dr. Finkenbine

180-363A,B PHYSICAL CHEMISTRY LABORATORY. (2 credits; 3 hours; Prerequisites: 180-255A,B or 180-313A). For Honours and Major Chemistry students. Selected experiments to illustrate physico-chemical principles.
Dr. Brown and Staff

180-371A,B,D. INORGANIC CHEMISTRY LABORATORY. (2 credits; 4 hours; Prerequisite: 180-362A,B; prerequisite/corequisite: 180-381A). Modular format incorporating self-paced and selfguided instructions. In consultation with the instructors, a program of experimental modules is chosen covering projects related to theoretical principles, synthetic techniques and those instrumental methods used in modern inorganic and organometallic chemistry. (Not open to students who have taken 180-392A,B,D).
Professor Shaver and Dr. Finkenbine

180-381A CHEMISTRY OF THE TRANSITION ELEMENTS. (3 credits; 3 lectures; Prerequisite: 180-281A,B). For Honours and Major Chemistry students. The history of transition chemistry, coordination numbers and geometry, nomenclature and symmetry. Crystal field theory will be described and applied to problems in spectroscopy, magnetochemistry, thermodynamics and kinetics. Molecular orbital theory is applied to carbonyl and organometallic compounds.
Professor Butler

180-382A ORGANIC CHEMISTRY OF NATURAL PRODUCTS. (3 credits; 3 lectures; Prerequisite/corequisite: 180-302A,B). Structure, synthesis, stereochemistry and biosynthesis. (Not open to students who have taken 180-482).
Professor Just

180-387D ANALYTICAL CHEMISTRY. (4 credits; 1 lecture; 1 tutorial; 3 hours laboratory; Prerequisites: 180-257D, 180-255A,B). For Chemistry Honours and Majors, others with permission. A treatment of the theory underlying analytical processes; practice in selected laboratory techniques and an original laboratory project.
Professor Salin

180-392A,B or D INTEGRATED INORGANIC/ORGANIC LABORATORY. (3 credits; 4 hours; Prerequisite: 180-302A,B; Corequisites: 180-381A and 180-302A, if not previously taken). Advanced laboratory for Honours and Major students. Modular format of self-paced and self-guided instruction. A program of modules is selected in consultation with the laboratory staff. The experimental modules consist of projects related to the theoretical principles, synthetic techniques and instrumental methods used in modern organic, inorganic and organometallic chemistry.
Professor Shaver and Dr. Finkenbine

180-393A,B PHYSICAL CHEMISTRY LABORATORY. (2 credits; 3 hours; Prerequisites: 180-273A, 180-363A,B). For Honours and Major Chemistry students. Selected experiments to illustrate physico-chemical principles more advanced than those of 180-363.
Dr. Brown and Staff

180-402B ADVANCED BIO-ORGANIC CHEMISTRY. (3 credits; 2 hours lecture, 1 hour seminar per week; Prerequisite: 180-302A,B). The application of advanced concepts of organic and physical chemistry to biological systems. The properties of amino acids, peptides, proteins, enzymes, nucleosides, etc., will be discussed and their relationship to biochemical reactions, the origins, of life, coenzymes, template syntheses, neurochemistry, etc.
Professor Belleau

180-404B BIOPHYSICAL CHEMISTRY. (3 credits; 3 lectures; Prerequisites: 180-204A and 214B or 213A,B and 223A,B). Molecular weight determination, hydrodynamic and spectroscopic properties of biopolymers. The structure and dynamics of biopolymers and biological systems. (Not open to students who are taking or have taken biochemistry 507-404 or 507-451)
Professors Galley and Meighen (Biochemistry)

180-411A AN INTRODUCTION TO RADIOCHEMISTRY. (3 credits; 3 lectures; Prerequisites: 180-204A and 214B or equivalents). The basic concepts of nuclear chemistry will be described mainly in a qualitative way. Such topics as forces within nuclei, theories of nuclear structure, radioactive decay, nuclear reactions and fission, particle accelerators and reactors, radiocarbon dating, and tracer technique will be treated. (Not open to students who have taken 180-311A).
Professor Yaffe

180-444A,B,D ADVANCED INTEGRATED LABORATORY I. (3 credits; 6-8 hours laboratory. Prerequisites: 180-355, 180-363, 180-392, 180-393; one of these may be taken as a corequisite). A laboratory course designed to give honours students experience in advanced techniques of synthesis and physico-chemical measurements. The course will be devoted in roughly equal proportions to experiments in inorganic, organic and physical chemistry.
Staff

180-445A,B,D, ADVANCED INTEGRATED LABORATORY II. (3 credits; 6-8 hours laboratory. Prerequisites: 180-355, 180-363, 180-392, 180 180-393; one of these may be taken as a corequisite). A laboratory course designed to give honours students experience in advanced techniques of synthesis and physico-chemical measurements. The course will be devoted in roughly equal proportions to experiments in inorganic, organic and physical chemistry.
Staff

180-452A PHYSICAL ORGANIC CHEMISTRY. (3 credits; Prerequisite: 180-352B). Intended primarily for Honours Chemistry students. The correlation of theory with physical measurements or organic systems; an introduction to photochemistry; solvent and substituent effects on organic reaction rates, etc.; reaction mechanisms.
Professors Farrell and Edward

180-455A INTRODUCTORY POLYMER CHEMISTRY. (3 credits; Prerequisites: 180-213A,B 273A). For Honours and Major students. A survey course on the structure of polymers, kinetics and mechanisms of polymer synthesis; molecular weight distributions; polymer configurations and the thermodynamics of polymer solutions; rubber, elasticity, osmometry and viscosity.
Professors St.Pierre and Eisenberg

180-456A MOLECULAR PROPERTIES AND STRUCTURE III ADVANCED QUANTUM CHEMISTRY. (3 credits; 3 lectures; Prerequisites: 180-345A, 180-355B; 198-241A,B, 198-242A,B; Corequisites: 189-223A,B, 189-315A,B). Quantum mechanical treatment of species of chemical interest. Introduction to perturbation theory, both time-dependent and time-independent. Treatment of the variational principle. Introduction to atomic spectra. Chemical bonding in terms of both the valence bond and molecular orbital theory. Elementary collision theory. Interaction of radiation with molecules.
Professor Whitehead

180-457A INSTRUMENTAL METHODS OF ANALYSIS. (3 credits; 2 lectures and 3 hours laboratory). For Honours students. Other students with permission of the lecturer. Mass spectrometry; liquid chromatography; infrared spectroscopy; X-ray diffraction and fluorescence spectrometry; Raman spectroscopy; thermal analysis; flame photometry; atomic absorption; activation analysis, polarography, flow injection analysis.
Professors Purdy and Salin

180-472B SYNTHETIC ORGANIC CHEMISTRY. (3 credits; 3 lectures; Prerequisite: 180-382A). Synthetic methods in organic chemistry and their application to the synthesis of complex molecules. (Not open to students who have taken 180-372B).
Professor Just

180-475A CHEMICAL KINETICS. (3 credits; 3 lectures; Prerequisite: Chemistry core). Kinetic laws, measurement of reaction rates, transition state and collision theory, elementary gas phase reactions. Elementary reactions in solution, reaction mechanisms in solution, reactions on surfaces and in solid state. Complex reactions and mechanisms, laser techniques, molecular beams, chemiluminescence, computer generated studies. Explosions.
Professor Grosser

180-476A,B QUANTUM CHEMISTRY. (3 credits; lecture and/or reading course; Prerequisite: Chemistry core). A survey of current theoretical approaches to molecular structure, spectroscopy and one electron properties.
Professor Whitehead

180-480A,B RESEARCH PROJECT. (3 credits; Prerequisite or Corequisite: 180-490A,B: registration by departmental permission only). A course designed to give Honours students an optional foretaste of research experience. The student will be assigned a project supervisor and a research project at the beginning of the session. The project will consist of a literature survey, experimental work, a written research report and an oral examination.
Staff

180-481B MODERN TOPICS IN INORGANIC CHEMISTRY. (3 credits; Prerequisites: 180-281A,B and 381A). Chemistry Honours students only. An introduction to areas of current interest in inorganic chemistry.
Staff

180-487A SELECTED TOPICS IN MODERN ANALYTICAL CHEMISTRY. (3 credits; Prerequisite: 180-387D). Honours Chemistry students. Other students with permission of the lecturer. Current theories of aqueous and nonaqueous solutions, with application to analytical chemistry; recent advances in analytical techniques (topics covered vary from year to year and may include chromatography; applications of kinetics, solvent extraction and thermal analysis) with emphasis on their theoretical basis.
Professor Fresco

180-490A,B, RESEARCH PROJECT. 3 credits; 9 hours laboratory; Prerequisite or Corequisite: 180-480A,B; Registration by departmental permission only). For description, see 180-480A,B.
Staff

180-493A,B INTRODUCTION TO STATISTICAL THERMODYNAMICS. (3 credits; 2 lectures; Research project; Prerequisite: Chemistry core). Fundamental principles of statistical mechanics; microcanonical and canonical ensembles; thermodynamic functions of ideal gases; theories of solids, chemical equilibria; absolute reaction rate theory; van der Waals gases; real gases; lattice statistics.
Professor Eu

180-543A THE CHEMISTRY OF PULP AND PAPER. (2 credits; 2 lectures; undergraduate prerequisite/corequisite: Core curriculum in chemistry). The processes for converting wood to paper are described with emphasis on the relevant organic, physical and surface chemistry.
Dr. Gray and Dr. A. Robertson

180-577D ELECTROANALYTICAL CHEMISTRY. (3 credits; 2 lectures and 4 hour laboratory. Registration by departmental permission only). The application of electroanalytical techniques including polarography, coulometry and chronopotentiometry, to inorganic, organic and biochemical analysis.
Professor Purdy

180-585B COLLOID CHEMISTRY. (3 credits; Prerequisites: Chemistry core curriculum or equivalent; not open to students who have taken 180-485). Principles of the Physical Chemistry of phase boundaries. Electrical double layer theory; van der Waals forces; Brownian motion; kinetics of coagulation; electrokinetics; light scattering; solid/liquid interactions; adsorption; surfactants; hydrodynamic interactions; rheology of dispersions.
Professor Mason, Drs. Gray and van de Ven

180-597B ANALYTICAL SPECTROSCOPY. (3 credits, 2 lectures; 3 hours laboratory; Prerequisite 180-457A or permission of instructor, 180-457A may be taken concurrently). The design and analytical use of spectroscopic instrumentation will be examined with respect to fundamental and practical limitations. Classical emission, fluorescence, absorption and chemical luminescence will be discussed. Contemporary topics may include photo-acoustic spectroscopy, multielement analysis, X-ray fluorescence and modern multiwavelength detector systems.
Professor Salin

COMPUTER SCIENCE (308)

Professors – M.M. NEWBORN *(Director);* W.O. THORPE; D.J. BURRAGE; V. CHVATAL; L. DEVROYE, T.H. MERRETT; C.C. PAIGE; G.F.G. RATZER; G.T. TOUSSAINT
Assistant Professors – G. CORMACK; N. FRIEDMAN; N. HORSPOOL; R. POULSON; D. THERIEN
Auxiliary Professor – M. PEZARRO
Faculty Lecturers – L. DUNKELMAN; A. GREENBERG
Postdoctoral Fellows – L. GOLDFARB; G. HAHN

Burnside Hall: 805 Sherbrooke St. West,
Montreal, P.Q. H3A 2K6
Ninth Floor
Department Office, (undergraduate activities)
Room 945 Telephone: 392-8275

Computer Science is a field with a history of only forty years but with a future that will stretch the imagination. The creators of electronic calculating machines during the last world war solved many scientific computational problems, and rapid growth of computational numerical analysis followed. Mathematical techniques

found applications beyond scientific and engineering problems, creating the new field of operations research. Computers began to be put to uses of such complexity that describing the problems became more difficult than the computations themselves. Instructing the computer became the specialized discipline of programming. Programmers needed languages to communicate with the machine and operating systems to control it, and the field of software was born. The discovery of non-numerical uses of computers led to fields as diverse as large scale data processing, information retrieval and artificial intelligence. On the theoretical side, the problems and applications of computers have created areas of study in the theory of formal languages, the theory of automata and the theory of computation.

Undergraduate courses in the School of Computer Science provide the fundamentals necessary for careers in this field. Students with undergraduate training in Computer Science have available a wide range of job opportunities. They are needed, for example, to help automate libraries, the postal system, traffic flow, assembly line processes and medical record keeping. Training, aimed at preparing students for such diverse careers, is provided at McGill on the Amdahl V7 computer. The School has a PDP 11/45, a PDP 11/20, a Data General multiprocessing system consisting of eight Nova 4 computers, a Cromemco Z-80 microcomputer and several other small systems available to advanced students.

The School of Computer Science offers undergraduate programs in the Faculty of Science: a Faculty Program in Mathematics and Computer Science, a Minor Program in Computer Science, an Honours Program in Computer Science and an Honours Program in Mathematics and Computer Science; in the Faculty of Arts; a Faculty Program in Mathematics and Computer Science, a Minor Program in Computer Science.

Special programs involving Computer Science are also available in the Faculties of Management and Engineering. For further details, the Announcements of these Faculties should be consulted.

Some graduate courses in Computer Science are available to suitably qualified senior undergraduates. For further information, see the *Faculty of Graduate Studies and Research Announcement.*

HONOURS PROGRAM IN COMPUTER SCIENCE

Admission to the program is based on a strong performance in CEGEP Mathematics courses or the equivalent for students not coming from CEGEP schools.

A student must maintain a 3.2 cumulative GPA and must have at least this average upon graduation as well. Students failing to maintain such an average will be encouraged to enroll in the Major Program in Mathematics with a Minor Program in Computer Science or in the Faculty Program in Mathematics and Computer Science.

Requirements for Honours in Computer Science

Of the 90 credits necessary to obtain a degree, 76 are specified by this program. This includes a required core of 33 credits in Computer Science and 28 credits in Mathematics, a minimum of 6 credits in special electives in Computer Science, and a minimum of 9 credits in special electives in Mathematics.

A. Core courses

Computer Science (33 credits)
308-250, -273, -302, -305, -310, -317, -350 or 189-317, -400, -405, -415, -530.

Mathematics (28 credits)
189-222, -250, -251, -254, -258, -259, -315 or -325, -356, -416 or -343.

b. Optional courses

Computer Science (a minimum of 6 credits)
308-420, -421, -424, -425, -540, -566, -567, -573, or 304-424, 304-322.

Mathematics (a minimum of 9 credits)
189-255 or 333, -327 or -579, -328, -346 or -377, -407, -417, -427 or -578, -489, -490.

Note: With the adviser's approval, a student may substitute 189-242, -243 for 189-254, also 189-314 for 189-259. For students that make the first substitution, 189-333 must be taken rather than 189-255.

HONOURS PROGRAM IN MATHEMATICS AND COMPUTER SCIENCE

Credit requirements are as follows:

A. Core courses (compulsory)

Computer Science (30 credits)
308-259, -273, -302, -305, -310, -317, -400, -405, -530 and 189-578.

Mathematics (34 credits)
189-250, -251, -254, -255, -258, -259, -371, -372.

B. Special electives (9 credits)

Computer Science
308-415, -424, -425, -540, -566, -567, -573.

Mathematics
189-356, -377, -416, -489, -490, -579.

Students must consult an Honours adviser in both departments.

FACULTY PROGRAM

For details concerning the Faculty Program in Mathematics and Computer Science, see beginning of Science section.

MINOR IN COMPUTER SCIENCE

The Computer Science Minor may be taken in conjunction with any program in the Faculties of Arts and of Science (with the exception of the Faculty Program in Mathematics and Computer Science) with the approval of the Adviser of the main program and the School of Computer Science. At the time of registration in the final year, students must declare their intent to receive a Computer Science Minor and approval must be given by the School to the particular sequence of courses the student wishes to call the Computer Science Minor.

Requirements: (24 credits)

Computer Science 308-202, -273, -302, -317 plus 12 credits chosen from the advanced computer science courses.

308-200 or 308-250 may be substituted for 308-202, and 308-210 may be substituted for 308-273. Alternatively, students may be allowed to substitute up to six credits in other disciplines if they have already completed elsewhere courses equivalent to 308-202 and 308-273.

All courses must be passed with a grade of C or better.

Students may receive credit towards their Computer Science Minor by taking certain approved courses outside the School of Computer Science. These courses must have a high Computer Science content. A student will not be permitted to receive more than six credits from such courses. The School of Computer Science will establish a list of approved courses.

If a student's Major program requires Computer Science courses, up to six credits of Computer Science courses may be used in fulfillment of both Major and Minor requirements. A student must, however, take a minimum of 18 credits of approved Computer Science courses at McGill specifically towards fulfillment of the requirements for the Minor.

Course Descriptions

• *Denotes not offered 1982-83.*

Courses in the School are grouped into four categories:

A. An introductory course primarily for Arts students (not open to Science students): 308-100.

B. General electives for students not specializing in Computer Science: 308-200, -210, -230, -300, -315.

C. Introductory courses for students specializing in Computer Science: 308-202, -250, -273, -317.

D. Advanced Computer Science courses: 308-302, -305, -310, -400, -405, -415, -420, -421, -424, -425, -530, -540, -566, -567, -573.

Notes: (1) Not more than oneof the following courses may be taken for credit: 308-100, -200, -202, -250.
(2) 308-230 and 308-300 are not open to students who have taken or are taking any course from category D.
(3) Courses 308-210 and 308-273, 308-300 and 308-302, 308-315 and 308-317 are mutually exclusive; credit will only be given for one of each pair.

308-100B INTRODUCTION TO COMPUTING. (3 credits; No prerequisites). An introduction to applications and general concepts of computing; introduction to programming using a selection of features of the programming language FORTRAN. The course includes modules, containing video tape lectures, module booklets, interactive terminal sessions and programming assignments. This course is primarily for Arts students. (not open to Science students or to students who have taken or are taking 308-200, 202, 080, 208, 220 or 250).
Dr. Hahn

308-200A,B INTRODUCTION TO COMPUTER SCIENCE. (3 credits; 3 hours; Prerequisite: 189-121. Number systems; data representation; algorithm design; FORTRAN; computer methods including searching, sorting solution of equations, numerical integration and matrix manipulation. This course is designed for students in mathematics and the physical sciences. (Not open to students who have taken or are taking 280-331 or 308-100, 080, 208, 202, 220 or 250).
Professor Ratzer

308-202A,B FUNDAMENTALS OF COMPUTING. (3 credits; 3 hours; Prerequisite: 189-221. The structure and design of computer algorithms. Implementation of algorithms in a modern high-level language (normally Pascal). Representation of data and simple data structures. Applications of computers to solving both numerical and non-numerical problems. Relationship with FORTRAN. FORTRAN as a second programming language. (Not open to students who have taken or are taking 308-100, 080, 208, 200, 220 or 250 or 280-331; this course must be followed by 308-317, *not* 308-315).
Professor Friedman

308-210A,B COMPUTER STRUCTURE AND ASSEMBLY LANGUAGE PROGRAMMING. (3 credits; 3 hours; Prerequisite: 308-200 -202, or -250. Computer structure, machine instruction execution, addressing techniques, and digital representation of data. Symbolic coding and assembly systems, macro definition, program segmentation and linkage. (Not open to students who have taken or are taking 308-273).
Professors Ratzer and Devroye

- **308-220B DIGITAL COMPUTING FOR STATISTICAL ANALYSIS.** (3 credits; 3 hours; Prerequisite: 166-350, 189-231, 204-204 or equivalent). The course introduces the student to computers and to their uses in the solution of statistical problems. Numbers systems, data representation, characteristics of a high-level programming language (FORTRAN), methods of computer solution of statistical problems, random numbers, games of chance, simulation. (Not open to students who have taken or are taking 280-331 or 308-100, 080, 208, 200 or 250).
Staff

308-230B COMPUTERS IN DATA PROCESSING. (3 credits; 3 hours, Prerequisite: 308-200 -202, or -250. Uses of computers for data processing; COBOL; job control language; system utility programs; file processing; comparison of languages in business-oriented applications.
Professor Burrage

308-250A INTRODUCTION TO COMPUTER SCIENCE. (3 credits; 3 hours). For Honours students only. An introduction to concepts in the design of computer algorithms, including basic data structures, analysis of algorithms, establishing correctness of programs and program testing. A high level programming language will be studied and students will implement solutions to specific problems encountered in computer science.
Professor Devroye

308-273A,B INTRODUCTION TO SMALL COMPUTERS. (3 credits; 3 hours; Prerequisite: 308-202, -250, or a high grade in -200. Organisation and architecture of small computers. Programming for small computers. Assemblers, cross-assemblers and simulators. Addressing techniques. Interrupts. Input and output programming and devices. Simple data structures. System support macros and software. (Not open to students who have taken or are taking 308-210).
Staff

308-300A,B PROGRAMMING LANGUAGES. (3 credits; 3 hours; Prerequisite: 308-210 or 273). A study of programming languages including PL/1 and two from APL, LISP or SNOBOL. Computer solution of non-numerical problems. (Not open to students who have taken or are taking 308-302).
Professor Thorpe

308-302B A COMPARATIVE STUDY OF PROGRAMMING LANGUAGES. (3 credits; 3 hours; Prerequisite 308-273 or a high grade in -210, -317). A study of high-level programming language features and concepts including: scope and life-time rules, type checking, parameter passing, recursive procedures, records, modules, structured programming and program reliability. The student will be required to run programs in at least three of the languages covered. These languages will include FORTRAN, PL/1, ALGOL, PASCAL, SIMULA 67, SNOBOL, LISP and APL. (Not open to students who have taken or are taking 308-300).
Professor Therien

308-305A COMPUTER SYSTEM ARCHITECTURE. (3 credits; 3 hours; Prerequisites: 308-273 or a high grade in -210, -317). A functional description of computer hardware. Hardware concepts and current technology. Memories, buffers, memory hierarchies and dynamic address translation. CPU characteristics, performance factors, overlap, parallel and pipeline systems. Microprogramming. Interrupt mechanism and clocks. Channels, control units, input devices including telecommunication equipment.
Mr. Greenberg

308-310B COMPUTER SYSTEMS AND ORGANIZATION. (3 credits; 3 hours; Prerequisite: 308-305). Control and scheduling of large information processing systems. Operating system software – resource allocation, dispatching, processors, access methods, job control languages, main storage management. Batch processing, multiprogramming, multiprocessing, time sharing.
Professor Cormack

308-315A,B INTRODUCTION TO INFORMATION STRUCTURES. (3 credits; 3 hours; Prerequisite: 308-210 or 273. Introduction to basic types of data structures, their theoretical properties and some of their applications. Contents: storage of arrays, applications to special matrices and scientific computation; queues and stacks, applications to compiler writing; sorting and searching; introduction to list processing and symbolic manipulation. (Not open to students who have taken 308-202 or to students who have taken or are taking 308-317).
Professor Devroye

308-317B INFORMATION STRUCTURES. (3 credits; 3 hours; Prerequisite: 308-202, -250, or a high grade in -200). Basic data structures. Representationof arrays, stacks and queues. Linked lists and their applications to binary trees. Internal sorting. Graph representation. Graph algorithms. This course will assume knowledge of a high-level language such as PASCAL or ALGOL W. (Not open to students who have taken or are taking 308-315).
Professor Merrett

308-400A,B TECHNICAL PROJECT AND REPORT. (3 credits; Prerequisite: 15 Computer Science credits including 308-317). A computer related project, typically a programming effort, along with a report will be carried out in cooperation with a staff member in the School of Computer Science.
Professor Avis

308-405B ANALYSIS OF ALGORITHMS. (3 credits; 3 hours; Prerequisites: 189-343A or equivalent and 308-317). An introduction to techniques for the analysis of algorithms and basic methods of improving their efficiency. Various problems from engineering applications and computer science will be selected and efficient algorithms developed for their solution. Assignments in the course will include analysis of algorithms and design and implementation of algorithms in suitable high level programming languages.
Professor Chvatal

308-415B INTRODUCTION TO COMPILER DESIGN. (3 credits; 3 hours; Prerequisites: 308-302 and -317). The structure of a compiler. Lexical analysis. Basic parsing techniques. Syntax directed translation. Run-time implementation of various programming language constructs. Introduction to code generation and optimization. Students will be expected to implement parts of a compiler.
Professor Friedman

308-420A FILE SYSTEMS. (3 credits; 3hours; Prerequisite: 308-302 and -317). Language essentials for file processing; sequential files sorting, updating, indexed sequential files; direct files; files of structured data. (Not open to students who have taken 308-320).
Professor Burrage

308-421B INTRODUCTION TO DATABASE SYSTEMS. (3 credits; 3 hours; Prerequisite: 308-420). Database concepts. The relational, hierarchical and network models of data. Use of implementations of the three data models. Data description languages. Data manipulation languages. Security, integrity and concurrency problems in databases.
Professor Burrage

308-424A TOPICS IN ARTIFICIAL INTELLIGENCE I. (3 credits; 3 hours; Prerequisite: 308-317). Introduction to search methods in AI problems. Automatic theorem proving techniques, symbolic integration, game playing by computers, the minimax and alpha-beta algorithms, and heuristic approaches to the travelling salesman problem. (Not open to students who have taken 308-425 before 1977-78).
Professor Newborn

308-425B TOPICS IN ARTIFICIAL INTELLIGENCE II. (3 credits; 3 hours; Prerequisite: 308-317). This course is an introduction to various concepts in AI. Contents; Neural information processing; picture processing; parametric, nonparametric, supervised, and unsupervised learning; pattern recognition programs; Bayesian decision theory; scene analysis; philosophical and psychological aspects of AI; implications of AI to the sciences, arts and society.
Professor Toussaint

308-530A FORMAL LANGUAGES. (3 credits; prerequisites: 308-415, 189-251 or permission of the instructor). The definition of a language. Grammars. Finite automata and regular languages. Context free languages. Pushdown automata. Turing machines and undecidable problems. Context sensitive and phrase-structure languages. (Not open to students who have taken 308-630).
Professor Freidman

308-540A MATRIX COMPUTATIONS. (3 credits; Prerequisite: 189-327 or 308-350). Designing and programming reliable numerical algorithms. Stability of algorithms and condition of problems. Reliable and efficient algorithms for solution of equations, linear least squares problems, the singular value decomposition, the eigenproblem and the generalized eigenproblem. Perturbation analysis of these problems. Special cases: symmetric matrices, positive definite matrices, structured matrices.
Professor Paige

308-566A COMPUTER METHODS IN OPERATIONS RESEARCH I. (3 credits; prerequisites: 308-317 and 189-251 or permission of the instructor). Use of the computer in solving deterministic problems in operations research. Linear programming and extensions. Efficient methods for large problems. Transportation problems. Network models. (Not open to students who have taken 308-667).
Professor Paige

308-567B COMPUTER METHODS IN OPERATIONS RESEARCH II. (3 credits; prerequisites: 189-356, 308-566 or permission of the instructor). Use of the computer in solving problems in operations research with emphasis on probabilistic problems. Dynamic programming. Markov decision processes. Inventory models. Waiting line models. Computer simulation. (Not open to students who have taken 308-666).
Professor Paige

308-573A,B MINICOMPUTERS. (3 credits; 3 hours; Prerequisites: 308-305). Characteristics and internal structure of micro and minicomputers. Theoretical concepts and properties of assemblers, loaders and simulators. Assembler and machine languages for small computers. System software. Applications for small computers. Students will be assigned "hands-on" projects.
Professor Ratzer

*CRYSTALLOGRAPHY (186)**

Room 337, Frank Dawson Adams Building,
3450 University Street,
Montreal, PQ, H3A 2A7,
Telephone: 392-5840.

Most solids, from the minerals of the earth and the moon to the proteins and other macromolecular biological materials, have a structure that is characterized by a regular triperiodic arrangement of atoms and molecules; they are crystalline. Crystallography concerns itself withthe determination of these interatomic arrangements and their imperfections as well as with the study of the resulting chemical and physical properties of crystalline matter.

Crystallographers find their problems in fields as diverse as mineralogy, crystal physics, molecular biology, solid state chemistry, materials science, group theory, etc. The student's preparation should therefore be as sound and broad as possible in the fundamentals of science. In the Honours and Major programs, which are administered by the Department of Geological Sciences, a student takes more chemistry than the physics student, and more physics and mathematics than the chemistry student. In addition, the student at the undergraduate level will be taught morphological and structural crystallography, symmetry, crystal chemistry, the techniques of X-ray diffraction, and optical crystallography.

Students successfully completing the crystallography program may proceed to graduate studies in crystallography, where they may specialize in the physical, the chemical, or the biological aspects of the subject. This training will prepare crystallographers for careers in basic research and teaching or in industry.

**Crystallography is located in the Department of Geological Sciences.*

MAJOR IN CRYSTALLOGRAPHY

First year: Geology 186-210A, -211B; Chemistry 180-213A,B or -212A,B; Mathematics 189-222A,B, -223A; Physics 198-219A and -251A or -231A,B. (9 additional credits).

Second year: Geology 186-501A and 312B; Mathematics 189-314A,B; Chemistry 180-281A,B; Physics 198-346D; Computer Science 308-200A. (9 additional credits).

Third year: Geology 186-503D; Mathematics 189-315A,B; Physics 198-434B, -438B; Chemistry 180-381A. (12 additional credits).

HONOURS IN CRYSTALLOGRAPHY

Honours students will take the same courses required for Major students and will be given 18 credits of additional course requirements, inclosely related disciplines, after consultation with their adviser. One additional requirement will be the writing of a report on a research project carried out in 186-503D. They must maintain a 2.8 minimum GPA.

Course Descriptions

• *Denotes not offered 1982-83.*

186-211B INTRODUCTION TO CRYSTALLOGRAPHY AND CRYSTAL CHEMISTRY. (3 credits; 2 hours lectures, 3 hours laboratory). Sufficient crystallography for students to understand space groups. The principles of mineral crystal structures will be explained and the most important structure types will be reviewed. A familiarity with crystal structures of rock-forming minerals is an essential part of a geologist's training. This course is designed to give the students the crystallography they need to visualize a crystal structure and to appreciate its chemical and physical properties.
Professor Donnay

186-501A CRYSTAL CHEMISTRY. (3 credits; 2 hours lectures, 1 hour seminar; Prerequisite: Geology 186-211A, 180-213A,B). Discussion of crystal structures of important mineral groups, especially oxides, sulphides and silicates. Solid solution. Relation of structure to morphology and to chemical and physical properties of crystalline matter.
Professor Donnay

186-502A CRYSTAL-STRUCTURE ANALYSIS. (3 credits; 2 lectures; 1 laboratory). Elements of crystallography and diffraction physics basic to structure determination. Choice of crystal; principles underlying photographic and counter methods of collecting intensity-data. Data reduction. F^2 synthesis. The phase problem. Trial and error methods, heavy-atom techniques, direct methods. Electron density calculation. Refinement of structure.
Professor Donnay

186-503D CRYSTAL-STRUCTURE DETERMINATION. (6 credits; 6 hours laboratory; Prerequisite: 186-211B, or 502A). Techniques of structure determination applied to a research problem. (Not open to students who have taken 186-493D).
Professor Donnay

ENVIRONMENTAL STUDIES

A Minor program in Environmental Studies is offered, requiring 24 credits. Students are recommended to consult their adviser and the Supervisor of the program in their first and second years and at the time of registration in their final year, students may declare their intent to obtain a Minor in Environmental Studies. With the agreement of their adviser in their principal program they must submit their program of courses already taken and to be taken in their final year to the Supervisor of the Environmental Studies Program in the Department of Geography. The Supervisor of Environmental Studies will then certify which courses the student will offer for the Minor in Environmental Studies and will certify also that the student's complete program conforms with the requirements of the Minor in Environmental Studies.

The program is administered by the Department of Geography and the supervisor is Professor T.C. Meredith from whom further information can be obtained (Burnside Hall, Room 414, telephone 392-4718).

GENERAL REGULATIONS

To obtain a Minor in Environmental Studies, students must:

(a) ensure that their academic record at the University includes passes at C grade or higher in the courses as specified in the course requirements given below;

(b) offer a minimum total of 24 credits from the courses as given below, such credits to be in courses which are not being counted as core requirements towards the student's principal degree program; and

(c) ensure that a minimum of 15 of the credits specified in (b) above are taken *outside* the department of the student's principal degree program.

A further requirement applicable only to students registered for a principal degree in the Faculty of Science or the Faculty of Engineeringis that their academic record must include a minimum of 6 credits, with passes at C grade or higher, taken from courses which are marked by an asterisk (*) in the list of options provided in the list of courses approved for a Minor in Environmental Studies.

COURSE REQUIREMENTS

To qualify for a Minor in Environmental Studies, a student's academic program must contain passes at C grade or higher in the following:

(1) Biology 177-308B, "Communities and Environments" – 3 credits;

(2) Geography 183-203D, "An Introduction to Environmental Studies" – 6 credits;

(3) One 3-credit course in statistics at a level of Mathematics 189-203A or higher;

(4) Such additional courses as may be necessary to satisfy the requirements under (b) of the general regulations, to be chosen from the following list of approved courses. Where several courses are listed as alternates, only *one* of these courses may be offered for the Minor in Environmental Studies.

In selecting courses, it is important to check the listing in the department concerned to see what prerequisites, if any, are needed. Where possible, students are urged to take at least one course concerned particularly with field work or applications.

OPTIONAL COURSES

Notes: 1) Students with a principal program in the Faculty of Science or the Faculty of Engineering must offer a minimum of 6 credits from courses indicated by an asterisk (*) – see general regulations.

2) Most courses listed at the 300 level and higher have prerequisites. Although instructors may waive prerequisite(s) in some cases, **students are urged to prepare their program of study will before their final year.**

3) Not all courses are available in any given year. Consult departmental listings for full course descriptions.

Anthropology

*151-206B	Culture and Adaptation

Architecture

*301-373A	History of Housing
*301-375B	Landscape
*301-376A	Structure of Cities or *301-484B Civic Design
301-377B	Energy Conservation and Buildings
301-378A	Site Usage

Biology

177-328B	Resource Biology
177-331G	Ecology Field Course
177-358A	Canadian Flora
177-391A	Animal Behaviour
*177-392B	Sociobiology
177-432A	Limnology
177-433D	Predictive Ecology
177-442D	Biological Oceanography

Chemical Engineering

*302-370B	Models of Socio-Technical Systems
302-374B	Air Quality Control Systems
302-472A	Industrial Air Pollution Control

Chemistry

180-307B	The Analytical Chemistry of Pollutants

Civil Engineering
303-310B Sanitary Engineering
303-430A Municipal Systems
303-431A Stream Pollution Control

Continuing Education
*495-472X Environmental Law for Citizens

Economics
154-313D Economic Development
*154-425B Economics of Ecology or *154-505B Resources Economics

Engineering
300-230A Environmental Aspects of Technology
302-471 Industrial Water Pollution Control (660-005X) or Civil Engineering 303-431A Stream Pollution Control

Geography
183-272B Terrain Analysis II or Geology 186-242A Geomorphology
183-302D Environment: Ecosystems and Man
183-305A The Geography of Soils
183-308A Air Photo Interpretation and Remote Sensing or Geology 186-535A/536B Photogeology I and II
*183-313A Geography of Recreation or 183-307B Soils and Land Utilizationor 183-327B Water Resources and Land Use
183-322A Hydrology
183-450A Ecological Biogeography or 183-451B Biogeography of the Quaternary
183-499G The Physical Geography of the Subarctic: Schefferville Field Camp or 183-495G Field Studies in Physical Geography

One Geography regional/environment course from 183-414B, 301A, 309A, 310B, 325A, 326B, 403B.

Geology
186-201A Introductory Geology or 186-221A General Geology for Engineers or Geology 186-243B Environmental Geology
186-310A Introductory Petrology
186-430A Geology of Energy Sources
186-431B Glacial and Pleistocene Geology
186-446A Engineering Geology
186-448A Applied Geochemistry
186-499B Ground Water Geology

Oceanography
198-309A Descriptive Oceanography (see Physics)
395-545A Water Pollution: Biological Aspects

Mechanical Engineering
305-447A Combustion

Meteorology
195-210A Introduction to Atmospheric Science
195-211B Weather Systems and Climate or Geography 183-321A Climatic Environments or Geography 183-324B Bioclimatology
195-320A Introductory Atmospheric Physics

Microbiology
528-211A The Biologyof Microorganisms

Northern Studies
197-490A Seminar in Northern Studies I or 197-491B Seminar in Northern Studies II

Philosophy
107-326A Cultural Impact of Technology

Physics
198-337B Nuclear Energy and its Applications

Political Science
*160-466B Public Policy Analysis
*160-467B Science, Technology and Politics

Psychology
*204-306A Comparative Psychology
*204-330A Introduction to Social Psychology
204-422B Neurochemical Basis of Behaviour

Religious Studies
*260-370A The Human Condition
*260-471B Christian Social Ethics

*EXPERIMENTAL MEDICINE (516)**

516-301A PHYSIOLOGY AND BIOCHEMISTRY OF ENDOCRINE SYSTEMS. (3 credits; Prerequisite: Biology 177-200A and 177-201B). Offered in conjunction with the Department of Physiology. This course explores the physiological and biochemical basis for the control of the secretion and action of hormones. This will be accomplished by first describing the embryology and anatomy of each system, then the physiologic action and disposition of the hormone followed by its metabolism and mode of action in target tissues. Using this approach, the course will cover the hypothalamus-pituitary axis, the pituitary-adrenal axis, the pituitary-gonadal axis, the hormones of the adrenal medulla, the pancreas, the gut and posterior pituitary, the thyroid and parathyroid. The biochemistry and physiology of prostaglandins will also be covered.
Professors Solomon, Ruf, Mulay and Farooki

516-502A ADVANCED ENDOCRINOLOGY – PART I. (3 credits; Prerequisites: Biochemistry 507-311A and Physiology 552-311D are highly recommended). This course is designed for U-3 students who

are in a major or honours program in anatomy, biology, biochemistry or physiology and for graduate students. The material covers neuroendocrinology, pituitary hormones, the adrenal, ovarian and testicular hormones, their regulation, function and mechanism of action.
Professor Mulay and Staff

516-503B ADVANCED ENDOCRINOLOGY – PART II. (3 credits; Prerequisite: 516-502A). The topics covered in the second half of the course are the thyroids, parathyroids, prostaglandins, gut hormones and pancreatic hormones; pregnancy hormones and fetal development; hormones and cancer. The emphasis is on the physiology, biochemistry and regulatory mechanisms.
Professor Mulay and Staff

516-504A BIOLOGY OF CANCER. (3 credits; Prerequisite: A good knowledge of biology at the cellular and molecular level; open to U3 and graduate students only). An introduction to the biology of malignancy. This course takes a multidisciplinary approach and deals with the etiology of cancer, the biological properties of malignant cells, the host response to tumor cell growth and the principles of cancer therapy.
Professor Thomson and Staff

516-507D ADVANCED APPLIED RESPIRATORY PHYSIOLOGY. (6 credits; Prerequisite: 552-311D). Comprehensive coverage of respiratory physiology starting with fundamental principles and proceeding to latest developments in the field. Clinical application of physiological processes and their impairment in disease states are briefly referred to. Some background knowledge of respiratory physiology is advisable.
Professor Roussos and Staff

*Experimental Medicine is a division of the Department of Medicine. Information regarding course 516-301A may be obtained by phoning 842-1231 (ext. 644); for 516-502A and 503B, 842-1231 (ext. 661); for 516-504A, 937-6011 (ext. 798); for 516-507A, 392-8094.

GEOGRAPHY (183)

Professors; – J. BRIAN BIRD *(Chairman);* M.A. CARSON *(on leave, first term, 1982-83);* B.J. GARNIER; T.L. HILLS; J.T. PARRY
Associate Professors – W. ARMSTRONG *(on leave, second term, 1982-83);* R.N. DRUMMOND; G.O. EWING; J.E. LEWIS; J.O. LUNDGREN; T.R. MOORE; L. MÜLLER-WILLE *(on leave, 1982-83);* S.H. OLSON
Assistant Professors; – J. BRADBURY; N. ENRIGHT; T.C. MEREDITH
Auxiliary Assistant Professor – R. WRIGHT

Burnside Hall
805 Sherbrooke St. West,
Montreal, PQ H3A 2K6.
Department Chairman,
Room 510, Telephone: 392-5489.

General inquiries at Departmental Office,
Room 513, Telephone: 392-5700.

Geography is the study of the physical (both natural and man-made) and spatial environments of man and his interaction with them.

Consequently its broad range of topics covers issues such as acid rain and its consequences, regional economic disparities, urban transportation, native land claims and permafrost problems. It is the only academic discipline which is both a physical and social science and it provides a unique opportunity to obtain a broadly based exposure to modes of analysing the many environmental and locational problems of contemporary society. Students may pursue one of several specialised programs focussed on topics such as urban systems, the geography of economic development, man and his natural environment, climatology, the geography of living systems, and northern studies. Alternatively one may take a program covering topics in several of these fields or take one of several interdisciplinary science faculty programs in biogeography, climatology, geomorphology, hydrology and quaternary studies.

Graduates find employment in a wide range of industrial and commercial activities, as well as in various levels of government and education. Still others pursue graduate work in geography or urban planning.

The interaction of man with various aspects of his environment is emphasis in many of the courses and programs offered in the department. Some courses, however, focus on a range of local, regional and world problems, such as air and water quality, or food/population and economic development relationships. In others, the emphasis is on the study of physical, economic and cultural processes in a geographical framework. Other courses centre upon methods of geographical analysis.

Courses in the Geography Department are informally organized into sequences such as the following:

World Problems: 183-110A, -112B,
Urban: 183-216A, -217B, -314A, -331B, -333A, -412B, -413A
Economic: 183-311B, -313A, -315B, -317A, -318A, -319A, -408A, -410A, -411B, -415A.
Cultural-Ecological: 183-214A, -236A, -300B, -403A, -414B.
Northern Studies: 183-301A, -402B, -403A
Physical Geography: 183-113B, -203D, -325B, -499G.
Geomorphology: 183-301A, -402B, -403A
Hydrology: 183-322B, -327B
Climatology: 183-321B, -324B, -422B, -523A

Biogeography and Soils: 183-203D, -302D, -305A, -307B, -450A, -451B

Regional: 183-301A, -309A, -310B, -312A, -326B, -328B

Technical: Cartography, Remote Sensing, Quantitative methods: 183-201A,B -202A, -306B, -308A, -351B,

Field Courses: 183-495G, -499G

Combinations of these sequences may be followed leading to either B.A. Honours and Major in Geography (see Arts section) or B.Sc. Faculty Programs, Honours and Major in Geography as described below.

FACULTY PROGRAMS

For details see Faculty Programs, beginning of Science section.

There are no specific prerequisites to these faculty programs; courses that should be taken in U1 are marked with an asterisk. Any deficiencies in background should be taken concurrently as one of the elective selections.

Contact Burnside Hall, Room 513, Telephone 392-5700 for an appointment with an adviser.

B.A. HONOURS AND MAJOR IN GEOGRAPHY

For details, see Geography listed under the Faculty of Arts.

B.Sc. MAJOR IN GEOGRAPHY

Contact Burnside Hall, Room 513, Telephone 392-5700 for an appointment with an adviser.

Course Requirements

Students are required to take a minimum of 42 credits in Geography and 12 credits drawn from approved courses in the departments of Biology, Geology, Meteorology, Physics and from the Faculty of Engineering.

First year: Geography 183-201A,B, -202A, -203D, and 6 credits in human geography.

Second and third years: Geography 183-271A or -272B, -305A, -306B or -308A, -322B, -321B or -324B or -422B, -450A or -451B and 6 other credits in physical geography.

B.Sc. HONOURS IN GEOGRAPHY

Contact Burnside Hall, Room 513, Telephone 392-5700 for an appointment with an adviser.

All Honours students take a basic group of courses in Geography. In addition they may take a comprehensive program in Physical Geography, or choose an area of specialization. Specialized options are offered in Biogeography, Climatology and Geomorphology.

All four B.Sc. Honours programs involve completion of 54 or 60 credits of approved geography courses (including a 6-credit research course), 9 optional non-geography credits from a list of approved courses in ancillary fields, and a balance (of 27 or 21 credits) of electives. The following lists specify those courses which are compulsory in these programs. *A detailed description of each program, with all approved courses, is available from the departmental office, Room 513, Burnside Hall.*

Core Courses

(a) PHYSICAL GEOGRAPHY

Geography 201A,B, 202A, 203D, 271A or 272B, 302D, 305A, -306B or -308A, 321B or -324B or -422B, -322B, 325B, 450A or 451B, 481A, 491D,N

(b) SPECIALIZED OPTIONS IN BIOGEOGRAPHY, CLIMATOLOGY AND GEOMORPHOLOGY

Geography 201A, B, 202A, 203D, 271A or 272B, 306B or 308A, 321B or 324B, or 422B, 450A or 451B, 481A, 491D,N

PREREQUISITES

There are no departmental prerequisites for entrance to the Major or Honours B.A. or B.Sc. in Geography. It is helpful for Arts students to include six credits of mathematics in their CEGEP or pre-university programs. Students who have completed college or pre-university geography courses fully equivalent to those at first year university may substitute with their adviser's approval, other courses as part of their Major or Honours programs.

INTRODUCTORY COURSES

Students who have not taken physical geography or earth sciences at the College level, and students who do not intend to continue further in physical geography are recommended to take Geography 183-113B (a treatment of physical geography at the global scale).

Students seeking an overview of world geographic problems, and not necessarily planning to continue in geography, are recommended to take Geography 183-110A, 112B and/or 113B.

Students intending to continue in physical geography should enrol in Geography 183-203D.

Course Descriptions

• *Denotes not offered 1982-83.*

183-110A GEOGRAPHICAL PERSPECTIVES ON WORLD ENVIRONMENTAL PROBLEMS. (3 credits; 2 hours and conference). Introduction to geography as nature and man in a spatial context. An integrated approach to environmental systems and the human organization of them from the viewpoint of spatial relationships and processes. Special attention to major world problems.

Professor Hills and Staff

183-112B GEOGRAPHY OF CONTEMPORARY WORLD PROBLEMS. (3 credits; 2 hours and conference). Geographic perspectives on major contemporary world problems with an emphasis upon cultural-political background. A consideration of the world's increasingly adverse population-resource ratio, environmental deterioration, problems of energy supply, uncontrolled urbanization and the increasing disparity between the developed and the developing realms.
Professor Hills and Lundgren

183-113B AN INTRODUCTION TO PHYSICAL GEOGRAPHY. (3 credits; 2 hours and laboratory). An introductory description and explanation of the physical processes and properties of the earth's atmospheric systems and the continents of the earth. Energy at work in the atmosphere and oceans and at the surface, and the resulting world pattern of physical environments; the interrelationships of natural phenomena within these environments.
Professors Bird and Drummond

183-201A,B INTRODUCTION TO CARTOGRAPHY AND AIR-PHOTO INTERPRETATION. (3 credits; 1 hour plus laboratory periods). The basic principles and technical skills used in cartography and the interpretation of air photos for the presentation and analysis of spatially distributed data. Thematic maps and the communication of ideas in map form.
Professor Drummond

183-202A INTRODUCTION TO QUANTITATIVE METHODS IN GEOGRAPHY. (3 credits; 2 hours and conference). An introduction to the application of statistical techniques to the description, analysis and presentation of geographical data.
Professor Enright

183-203D AN INTRODUCTION TO ENVIRONMENTAL STUDIES. (6 credits; 2 hours and conference). Geographical problems and themes in environmental studies. The major environmental processes and the interaction between the components (the atmosphere, lithosphere and biosphere). Examination of Man's impact on the environment, and its consequences.
Professors Lewis, Moore and Meredith

183-214A CULTURAL GEOGRAPHY. (3 credits; 2 hours and conference; Relationships between environment, technology and society; the concept of a man-environment system in a time and space context with special reference to cultural landscapes and ecology.
Professors Hills and Meredith

183-216A INTRODUCTION TO ECONOMIC GEOGRAPHY. (3 credits; 3 hours) The course focuses on factors influencing the location of economic activities. Topics covered include: - optimum facility location theory, the theory of spatial competition, explanation of regional disparities in Canadian freight rate policies on regional economic development, growth poletheory, metropolis - hinterland models and the role of government in industrial location.
Professors Ewing and Bradbury

183-217B INTRODUCTION TO URBAN GEOGRAPHY.(3 credits; 3 hours; Prerequisite: An introductory geography course at the college level or equivalent). The internal spatial structure of the city and related processes are analysed in terms of land uses, population density, social and economic characteristics of the population, travel patterns and household migration. Trends in urbanization and urban growth in Québec and Ontario are examined.
Professor Olson and Staff

183-236A INDIGENOUS PEOPLE OF NORTH AMERICA. (3 credits; 2 hours and conference). A survey of North American Indians and Inuit cultures from an ecological and ethnographic perspective. Discussion of adaptations to the North American environment from earliest origins and an analysis of the traditional patterns of life and of the process of cultural change occurring within selected environmental zones.
Professor Kemp

183-271A TERRAIN ANALYSIS I. (3 credits; 2 hours and conference/laboratory; Prerequisite: A course in physical geography or equivalent). A systematic treatment of the geomorphology of areas of folding, faulting, intrusion and vulcanism and their response to weathering and erosion.
Professor Parry

- **183-272A TERRAIN ANALYSIS II.** (3 credits; 2 hours and conference/laboratory; Prerequisite: A course in physical geography or equivalent). A systematic treatment of the geomorphology of areas dominated by gradational processes: glacial and periglacial, fluvial and mass-wasting, coastal and marine, aeolian and arid.
Professor Parry

- **183-300B GEOGRAPHICAL ASPECTS OF CULTURAL ADAPTATION.** (3 credits; 2 hours and conference; Prerequisite: 183-214A or permission of the instructor). Study of the dynamic processes that structure the relationship between man, culture and environment. The role of energy and information for adaptive processes will be analyséd within the context of urban and non-urban societies. Special attention to spatial strategies in adaptive processes.
Professor Hills

183-301A GEOGRAPHY OF NORTHERN LANDS. (3 credits; 3 hours). An introduction to the northern circumpolar lands and seas, their resources, peoples, socio-economic and political systems and future developments. The course is divided into three sections: introduction to library

resource materials on northern regional physical geography; northern ecology; and cultural geography of the circumpolar countries; (Not open to students who have taken 183-401A).
Professors Bird and Staff

183-302D ENVIRONMENT: ECOSYSTEMS AND MAN. (6 credits; 3 hours; Prerequisite: 183-203D or 177-111A or permission of instructor. Field work is emphasized). An ecological analysis of the physical and biotic components of the environment, with emphasis on the scientific, technological, institutional and other aspects of environmental degradation and restoration. Practical resource management in collaboration with local government and industry.
Professor Meredith

183-305A THE GEOGRAPHY OF SOILS. (3 credits; 2 hours and laboratory; Prerequisite: An introductory course in physical geography or geology or biology). Discussion of main properties of soils; principles of soil formation and classification; major soil types of the world; soil survey techniques.
Professor Moore

183-306B ADVANCED CARTOGRAPHY. (3 credits; 1 hour and laboratory periods; Prerequisite: 183-201A,B or permission of instructor). Analysis and interpretation of thematic and topographic maps. Their application to selected problems in physical and cultural geography, design and compilation of maps for geographic communication, map reproductionand computer mapping.
Professor Drummond

183-307B SOILS AND LAND UTILIZATION. (3 credits; 2 hours and conference/laboratory; Prerequisite: 183-305A or permission of instructor). Principles of land utilization and crop growth; case studies of the influence of soils on land use in selected environments.
Professor Moore

183-308A AIR PHOTO INTERPRETATION AND REMOTE SENSING. (3 credits; 2 hours and laboratory periods; Prerequisite: 183-201A,B or permission of instructor). The principles of air photo interpretation and remote sensing of the environment, applications to urban problems, geomorphology, land use and inventory of natural resources. Elementary photogrammetry and field work.
Professor Parry

183-309A CANADA: ITS GEOGRAPHIC FOUNDATIONS. (3 credits; 2 hours and conference). An introduction to the geography of Canada. A comprehensive geographical interpretation of Canada's salient physical and human characteristics, including landscapes and their evolution, climate, vegetation, man/land relationships and socio-economic attributes of the population.
Professors Bird and Bradbury

- **183-310B GEOGRAPHY OF THE CARIBBEAN.** (3 credits; 2 hours and conference). The nature, perception and management of Caribbean resources will be described and analysed from the point of view of historical factors, cultural diversity, and political organization. Models of economic development and attempts at regional organization will be considered. *Given in alternate years.*
Professor Hills

183-311B GEOGRAPHIC ATTRIBUTES OF THE CANADIAN ECONOMY. (3 credits; 2 hours and conference. Prerequisite: 183-309A, or an introductory geography course, or permission of instructor). A geographic interpretation of the Canadian growth experience. The evolution of Canadian economic regionalism considered in relation to natural resources, agriculture, urbanism and industrialization. Some effects of the American participation in the Canadian economy. Regional disparities and contemporary urban problems.
Professor Bradbury

- **183-312A THE GEOGRAPHY OF CHINA.** (3 credits; 2 hours and conference). A general overview of the Chinese landscape. Special topics will focus on the distribution and growth of population, the remodelling of agricultural organization since 1949, changes in the industrial sector and spatial pattern of industry, and transportation networks.

183-313A GEOGRAPHY OF RECREATION. (3 credits; 3 hours; Prerequisite: Introductory course in either human or physical geography or permission of instructor). The development of the phenomenon of modern recreation and its geographic characteristics. Outdoor recreation in different forms, with special attention to changing land requirements, at both urban and regional scale levels, including the development of park systems; structure and distribution of the recreational systems. Emphasis will be given to the greater Montreal region through field work-oriented term assignments.
Professor Lundgren

183-314A INTERMEDIATE URBAN GEOGRAPHY. (3 credits; 3 hours; Prerequisite 183-216A or 217B or permission of the instructor). An analysis of urban land development problems and issues in metropolitan transportation. Specific topics include: land market mechanisms; the effects of zoning and taxation policies on urban development patterns; transportation planning problems; and an introduction to urban land use/transportation models. *Given in alternate years.*
Staff

183-315B GEOGRAPHY OF TOURISM. (3 credits; 2 hours and conference; Prerequisite: Introductory course in either human or physical geography or permissionof instructor). Geographic characteristics of tourist travelling, including

changing tourist attractions, touristic mobility, tourist travel components and, the modern integrated tourist travel system; tourism and regional economic development, especially in Third World economics. *Given in alternate years.*
Professor Lundgren

- **183-316A POLITICAL GEOGRAPHY.** (3 credits; 3 hours). The study of the spatial dimensions of political activities and developments at the regional, national and global levels in historical and contemporary perspective. Presentation of case studies relating to the theoretical framework of political geography. *Given in alternate years.*
Professor Müller-Wille

183-317A GEOGRAPHY OF LATIN AMERICA: AGRARIAN ISSUES. (3 credits; 3 hours). Agrarian problems in the Third World; the current situation in Latin America; the historical background of dependence and inequality; agrarian reform. Emphasis will be placed on case studies. *Given in alternate years.*
Professor Armstrong

183-318A GEOGRAPHY OF CORPORATE ENTERPRISE. (3 credits; 3 hours; Prerequisite: 183-216A or permission of the instructor) An historico-geographical examination of the growth, role, location and distribution of modern industry in Canada. The course will examine the spatial effects of the impact of industrial growth. An historical perspective is necessary to understand the present nature of the Canadian industrial milieu. *Given in alternate years.*
Professor Bradbury

- **183-319A GEOGRAPHY OF ECONOMIC DEVELOPMENT.** (3 credits; 3 hours; Prerequisite: 183-214A, 216A or 217B or by permission of instructor). Analysis of the role of geography in the field of economic development; growth and development theories on different geographic scale levels; behaviour of selected economic activities in change process; regional economic development in relation to changing resource utilization; development planning. *Given in alternate years.*
Professor Lundgren

- **183-321B CLIMATIC ENVIRONMENTS.** (3 credits; 3 hours; Prerequisite: 183-203D or Meteorology 210A or instructor's permission). Scope of climatology, physical, dynamic and applied. The earth/atmosphere system, radiation and energy balances, governing meteorological processes. Movement and circulation of the atmosphere on a local and global scale. Resulting weather systems.
Professor Lewis

183-322B HYDROLOGY. (3 credits; 2 hours and laboratory/conference; Prerequisite: 183-203D or equivalent). Quantitative, experimental study of the principles governing the movement of water at or near the earth's surface.
Professor Carson

183-324B BIOCLIMATOLOGY. (3 credits; 3 hours; Prerequisite: 183-203D or Meteorology 210A or permission of instructor). *Given in alternate years.* Climatic classification and weather systems. Influence of climate on plants, animals, and man. Water balance and its application in agriculture and water resource analysis. Principles of physiological climatology; calculation of wind chill, effective temperature, and comfort indices. Application of physiological climatology to human affairs, e.g. health, urban planning, and house design.
Professor Lewis

183-325B PHYSICAL GEOGRAPHY OF QUÉBEC. (3 credits; 3 hours). An account of the development of the present natural environment of Québec with particular attention to changes following the retreat of the Laurentide Ice Sheet. Discussion of contemporary processes, resources and problems will provide a background for 183-326B. Field work.
Professor Carson

183-326B HUMAN GEOGRAPHYOF QUÉBEC. (3 credits; 2 hours and conference). A geographical interpretation of selected social, economic and political problems of contemporary Québec, ethnicity, demography, urbanization, regional disparities, economic marginality, with the purpose of segregating elements unique to Québec from the more universal aspects that pervade them.
Professor Olson and Staff

183-327B WATER RESOURCES AND LAND USE. (3 credits; 2 hours and laboratory; Prerequisite: 183-203D or 322A or permission of instructor). An introduction to the applications of the principles of hydrology to the development and management of water resources; the constraints imposed by natural systems on man's activities in rural and urban environments and the economic costs and benefits of modifying these constraints.
Staff

183-328B GEOGRAPHICAL PERSPECTIVES ON AFRICAN ENVIRONMENTS. (3 credits; 3 hours; Prerequisite: permission of instructor). An examination of the environmental characteristics of Sub-Saharan Africa: landscape, climate, vegetation and soils. Environmental problems in Africa: man's impact on desert margins, rivers and forests and the development of wildlife, agriculture and urban environments.
Professor Moore and Staff

183-331A URBAN SOCIAL GEOGRAPHY. (3 credits; 2 hours and conference; Prerequisite: 183-214A or 216A or permission of instructor). Social space and social time. The reflection of social structure in the spatial organization of the city. Historical perspective on changing personal mobility, life cycle, family structure and work organization. The appropriation and alienation of urban spaces.
Professor Olson

183-333A MONTREAL URBAN FIELD STUDIES. (3 credits; 2 hours and conference; Prerequisite: An introductory geography course or permission of instructor). Encounters with social and physical environments of Montreal. A phenomenology of the city. This course has a modular organization with weekly individual field exploration by class members.
Professor Olson

183-351B DATA ACQUISITION AND ANALYSIS IN HUMAN GEOGRAPHY. (3 credits; 3 hours; Prerequisite: 183-202A or permission of instructor). Techniques of data acquisition and measurement inhuman geography, geographical information systems and multivariate analysis of geographic data. There are four days of local field work in May.
Professor Ewing and Staff

183-402B SOCIAL AND ECONOMIC GEOGRAPHY OF CIRCUMPOLAR REGIONS. (3 credits; 3 hours; Prerequisite: 183-301A). The course covers man's – aboriginal and immigrant – involvement in the natural environments of the northern circumpolar regions. Besides discussing socio-economic development and change in a circumpolar perspective, emphasis is plut on case studies selected from arctic, subarctic, and boreal areas and their peoples. (Not open to students who have taken 183-402D).
Staff

- **183-403A LAND-USE SYSTEMS IN ARCTIC AND SUBARCTIC CANADA.** (3 credits; 2 hours and conference; Prerequisite: 183-301A or 402B or permission of instructor). An examination of historic and modern land-use patterns and systems in their areal differentiation related to renewable and non-renewable resources in Canada's arctic and subarctic environments. Plans and policies for northern development are analysed and contrasted by looking at the interests of government, industry, native and immigrant populations. (Not open to students who have taken 183-402D).
Professor Müller-Wille

- **183-408A GEOGRAPHY OF UNDERDEVELOPMENT: HISTORICAL ROOTS.** (3 credits; 3 hours; Prerequisite: permission of instructor). An examination of the concept of underdevelopment with special reference to the spread of mercantile capital, the evolution of industrial capitalism, the geographical spread of colonialism and its differential impact on 'peripheral' areas. (Not open to students who have taken 183-410D).
Professor Armstrong

183-410A GEOGRAPHY OF UNDERDEVELOPMENT: CURRENT PROBLEMS. (3 credits; 3 hours; Prerequisite: 183-408A or permission of instructor). An examination of the cultural, political, and economic mechanisms and manifestations of contemporary underdevelopment and the response to it from different regional and national peripheral societies within the dominant world economic system. (Not open to students who have taken 183-410D).
Professor Armstrong

183-411B GEOGRAPHY OF INTERNATIONAL TRADE. (3 credits; 2 hours and conference; Prerequisite: 183-216A or permission of instructor). Geographic patterns of international trade, regional resource base and trade generation. Trade systems. The foreland-hinterland concept, commodity innovation, geographic diffusion and range. *Given in alternate years:*
Professor Lundgren

183-412B ADVANCED URBAN GEOGRAPHY. (3 credits; 3 hours; Prerequisite: 183-217B or -314A). Topics in the spatial structure of North American cities are considered, with differing approaches to their explanation. Special emphasis is placed on the geographical outcomes of planning efforts to regulate changes in central cities, neighbourhoods and suburbs. Students' projects will elaborate themes discussed with coordinated case examples.
Staff

183-413A MODELS OF GEOGRAPHIC BEHAVIOUR. (3 credits; Prerequisite: 183-202A or 183-351B or equivalent). An examination of the geographic modelling of spatial and environmental choice behaviour, cognition and preference. Particular attention is given to urban travel demand models and models of recreation travel behaviour.
Professor Ewing

183-414B TROPICAL ENVIRONMENTS AND ADAPTATIONS. (3 credits; 3 hours; Prerequisite: 183-203D and 214A or permission of instructor). A consideration of the geographically significant cultural, physical and biological characteristics of tropical ecosystems – rain forest, savanna, arid and highland. An analysis of the principal adaptive systems, of the natural hazards to which such systems are subject, and of the local and external responses to the hazards. *Given in alternate years.*
Professor Hills

183-415A TOURISM RESOURCES: A GEOGRAPHIC ANALYSIS. (3 credits; 3 hours; Prerequisite: 183-313A or -315B). The regional tourism resource in a changing society; resource composition, utilization and management of the tourist region; special emphasis on geographic components of development strategies for typical resort areas/tourist regions within the context of international and interregional tourist travel systems. *Given in alternate years.*
Professor Lundgren

183-422B THE URBAN CLIMATIC ENVIRONMENT. (3 credits; 2 hours and laboratory; Prerequisite: 183-203D or permission of instructor). Examination of components of the urban radiation-energy budget and its direct corollaries – the urban temperature and wind fields. Air pollution is con-

sidered as a man-made perturbation affecting the natural conditions of the atmosphere. Methods of energy balance andair pollution diffusion modelling. Land-use planning in association with climatic and pollution effects. Implications of building climatology. *Given in alternate years.*
Professor Lewis

183-450A ECOLOGICAL BIOGEOGRAPHY. (3 credits; Prerequisite: 183-203D or 177-304A, 305A, 307A or 308B or permission of instructor). The study of life according to its environmental and spatial relationships with emphasis on plant populations. In this context are considered the dynamics of both populations and communities. Methods for the study of animal population dynamics are also considered. (Not open to students who have taken 183-451D).
Professor Enright

- **183-451B BIOGEOGRAPHY OF THE QUATERNARY.** (3 credits; Prerequisite: 183-203D or 177-304A, 305A, 307A or 308B or permission of instructor). An examination of the evidence for vegetation and faunal change over the earth's history with special reference to the Quaternary period. The role of glaciations, sea-level and temperature fluctuations in shaping present-day distributions, and role of Man as an agent of change in the Quaternary is explored. (Not open to students who have taken 183-451D).
Professor Enright

- **183-453A APPLIED GEOMORPHOLOGY.** (3 credits; 2 hours lecture and laboratory, Prerequisite: a previous course in geomorphology or permission of instructor). An examination of the role of the geomorphologist in the solution of environmental problems, the planning of environmental changes, and the detection and utilization of environmental resources. *Given in alternate years.*
Professor Carson

- **183-481A EVOLUTION OF MODERN GEOGRAPHY.** (3 credits; for Honours and Joint Honours and Major students in Geography only). A review of the historical development of geographly as a separate discipline and a systematic analysis of the main branches of modern geography with emphasis on the theoretical and methodological developments during the last fifty years.

- **183-483B HISTORICAL GEOGRAPHY.** (3 credits; 3 hours; Prerequisite: 183-214A and an introductory course in History). An examination of research methods in historical geography with emphasis placed on Canadian problems: - land appropriation, geographical strategies, frontiers and migration, communications and differentiation of urban environments in the 19th and 20th centuries. Special attention will be given to Montreal source materials.
Professor Olson

183-490A,B,D INDEPENDENT STUDIES IN GEOGRAPHY. (3 credits; open to U3 Geography Major students only; Prerequisite: projects must be arranged individually with instructors before registration). Research or reading projects permitting independent study under the guidance of a staff member specializing in the field of interest.
Staff

183-491D,N RESEARCH AND READING COURSE IN GEOGRAPHY. (6 credits; for U3 B.A. and B.Sc. honours geography students and for those B.A. joint honours students and for those B.A. joint honours students in geography who are not registered in 183-492D,N). Supervised reading, researchand preparation of an undergraduate thesis under the direction of a member of staff.
Professor Ewing and Staff

183-492D,N RESEARCH AND READING COURSE IN GEOGRAPHY. (3 credits; for U3 B.A. joint honours students in geography who are required to or opt to enrol in a parallel course in another department). Supervised reading, research and preparation of an undergraduate thesis under the direction of a member of staff.
Professor Ewing and Staff

- **183-495G FIELD STUDIES IN PHYSICAL GEOGRAPHY: LOCAL FIELD CAMP** (3 credits; 2 week field school in August-September; Prerequisites: 183-271A or 272B, 183-203D or equivalent). Field methods in physical geography including bio-physical survey, air photo interpretation and verification, and process studies. The course will be organised around three or four specific projects designed to familiarise students with a range of field survey procedures. Based at C.I.P. Harrington. *Given in alternate years.* (Not open to students who have taken 183-485G).
Professor Carson and Staff

- **183-499G SUBARCTIC FIELD STUDIES IN GEOGRAPHY: SCHEFFERVILLE.** (3 credits; Prerequisites: 183-203D or 301A or 325A). An introduction to the geography of the subarctic with emphasis on the application of field methods in physical and/or human geography. The course is based at the McGill Subarctic Research Station, Schefferville. Preregistration required in April of U2 for September of U3 year. *Given in alternate years.*
Professor Moore

183-503A ENVIRONMENTAL IMPACT EVALUATION: THEORY AND METHODS. (3 credits; 1 hour and 2 seminars; Available to: graduate or U3 students with permission of instructor). A study of the development and application of environmental impact evaluation noting the theoretical basis and practical shortcomings of various methodologies. Emphasis will be placed on the means of accurately assessing impacts on physical systems and evaluating the significance

of those impacts in terms of human usage of the affected systems.
Professor Meredith

183-523A ADVANCED CLIMATOLOGY. (3 credits; 2 hours and laboratory; Prerequisite: Intended for U3 students with a good science background and at least one course in climatology or meteorology; permission of the instructor is required). An advanced study of the principles of physical climatology involving a detailed examination of energy and mass exchange at/or near the earth's surface, emphasizing radiative, heat, moisture and momentum transfers. Methods of measurement based on energy balance, water balance, and turbulent transport theory. Models of potential and actual evaporation and their use in predicting soil moisture and plant productivity. Examples drawn from natural, agricultural, and urban environments. (Not open to students who have taken 183-423B).
Professor Lewis

183-535A INTERPRETATION METHODS: AIR PHOTOS AND IMAGERY. (3 credits; 2 hours and laboratory; Prerequisite: 183-308A or permission of instructor). Basic photogrammetry and interpretation procedures for aircraft and space craft photography and imagery. Limited enrolment.
Professor Parry and Staff

GEOLOGICAL SCIENCES (186)

Professors – R. DOIG; G. DONNAY; J.A. ELSON; R. HESSE; E.W. MOUNTJOY; V.A. SAULL; C.W. STEARN *(Chairman);*
Associate Professors – P.R. EAKINS; D. FRANCIS; R.H. GRICE; A.J. HYNES; W.H. MacLEAN; R.F. MARTIN; G.R. WEBBER
Assistant Professor – A.E. WILLIAMS-JONES
Research Associate – J.D.H. DONNAY
Faculty Lecturer – T. AHMEDALI

Frank Dawson Adams Building,
3450 University Street
Montreal, PQ, H3A 2A7.
Departmental Office Room 238,
Telephone: 392-5730

Geology is a study of the planet Earth – its composition, structure, behaviour, and history.

Although geologists must have a basic training in mathematics, physics, and chemistry, geology is a science in itself dealing with events which took place millions of years ago and involved masses of continental dimensions. Most geologists start their research in the field, collecting samples, measuring rock structures, and determining their properties with portable instruments. In the laboratory they analyse these specimens and interpret their measurements, using the sophisticated tools of modern science. The forces that molded a mountain chain, built a volcano, or drifted the continents apart cannot be duplicated by man, but the geologist can understand these events by analogy with experimental models and laboratory investigations of the compositions and strengths of the rocks of the crust of the earth. Like most sciences geology has its theoretical and practical aspects; geologists are concerned with the origin of our planet and solar system, the evolution of its surface, the nature of its interior, and the atomic structure of its minerals, as well as with the discovery of mineral deposits, the location of dam sites, and the prediction of earthquakes.

Some geoscientists specialize in the application of physics to understanding the earth's interior (geophysicists), some in investigating the composition of the earth (geochemists), still others in finding metals, oil and coal (economic geologists). Some study the rocks under the sea (marine geologists), some the history of the earth as revealed in its sedimentary rocks and fossils (stratigraphers and paleontologists), and still others study its landforms and surface materials (geomorphologists).

Entrance to the Major and Honours programs is through the Science Profile 1 of the Québec Collegial curriculum or its equivalent. Although students intending to enter these programs are urged to take geology courses available in their academic preparation for coming to McGill, such courses are not essential to entrance to a Geology program. Students at McGill may study geology as part of a Faculty program, in the Major program, or in the Honours program. The Honours program in Geological Sciences is designed to prepare the student for graduate work and for a career as a professional geologist. All programs include electives so that students can emphasize an interest in one branch of the science. Students interested in geophysics should enrol in the Honours or Major program in Solid Earth Geophysics. A program in Crystallography is also administered through the Department of Geological Sciences. Both these programs are described under their own sections in this announcement.

Geologists are employed by companies exploring for minerals and fuels, by government agencies such as the Ministère de l'Énergie et des Ressources and the Geological Survey of Canada, in research laboratories and in universities. They work in cities and in Arctic wastelands, in the laboratory and in the office, in the deserts and in the jungles of developing countries. Canada, a country dependent on vast natural resources, requires the geologist's skills for the development of the economy. A world facing crises in the supply of energy-giving fuels and metals will depend increasingly on the geologist for guidance in finding new supplies. Mankind faces progressive deterioration of his environment by its own wastes and requires the knowledge of the earth scientist to maintain the

quality of life. The environmental earth scientist should be a fully qualified specialist in a fundemental science, who is knowledgeable about the implications for society of environmental factors usually dealt with in other disciplines. As the frontiers of settlement advance into polar and desert regions, man must be able to predict the effects of his actions on natural processes.

The Honours and Major programs in Geology include the same "core" courses. Honours students must maintain a cumulative grade point average of 3.0, a cumulative percentage average of 72%, and are subject to certain restrictions in their choice of electives as outlined below.

FACULTY PROGRAMS

Faculty programs administered in this department include Geomorphology, Marine Geology, and Paleobiology. Students interested in these interdisciplinary fields should consult the departmental office to obtain an adviser.

MAJOR IN GEOLOGICAL SCIENCES

Students must inquire at Room 238, Frank Dawson Adams Building, telephone 392-5730 to be assigned an adviser.

U1: Geology 186-210A, -211B, -233B, 234A, -242A, -203B, Chemistry 180-213B. Electives to make 30 credits. Students who have taken no general course in geology may take Geology 186-201A and 202A. Geology 186-231E (Field School I) at the close of the session.

U2: Geology 186-220B, -303A, -310A, -311B, -312B, 332A, -344A, -347B; Electives to make 30 credits. Geology 186-331E (Field School II) at the close of the session.

U3: Geology 186-423A, -442A, -444B, -445B, -441D; Electives to make 30 credits.

HONOURS IN GEOLOGICAL SCIENCES

The core courses are the same as those specified for the major program but honours students must maintain a cumulative grade point average of at least 3.0, a cumulative percentage average of at least 72%, and in addition choose between the two following alternatives: take approved 400 or 500 level course(s) (6 credits). In addition, 6 of their elective credits must be approved by departmental advisers.

Qualified students may substitute appropriate courses in science and engineering for geology core courses, subject to the approval of the director of undergraduate studies.

Course Descriptions

• *Denotes not offered 1982-83.*

The following courses are without prerequisite and could be taken by students in the Faculty of Arts: 186-201A, -233B, -234A, -242A, and -243B. Other courses assume as a prerequisite completion of the courses required in the Sciences option of the CEGEP curriculum.

NOTE:

**Complete descriptions of courses 186-211B, -501A, -502A, -503D, may be found in the section on Crystallography.*

†Complete descriptions of courses 186-220B, -443D, -481D, may be found in the section on Solid Earth Geophysics.

186-201A INTRODUCTION TO GEOLOGY. (3 credits; 3 lectures; afternoon field trips). Geological time and methods of dating. Paleomagnetism, seismology and structure of the earth's interior. Continental drift, sea-floor spreading, and global plate tectonics. Minerals and rocks. Heat flow, metamorphism and igneous petrology. Economic geology. Geosynclines, mountain building and orogeny. Geology of the moon, earth's place in the universe.
Professors Hesse and Williams-Jones

186-202A INTRODUCTION TO GEOLOGY – LABORATORY. (1 credit; 3 hours laboratory; Corequisite: 186-201A). Identification of minerals and rocks; interpretation of geological maps and cross-sections.
Professors Hesse and Williams-Jones

186-203B STRUCTURAL GEOLOGY I. (3 credits; 2 hours lectures, 3 hours laboratory). Primary igneous and sedimentary structures, attitudes of planes and lines, stress and strain, fracturing of rocks, faulting, homogeneous strain, description and classification of folds, foliation and lineation, orthographic and stereographic projections. (Not open to students who have taken 186-303D).
Professor Hynes

186-210A INTRODUCTION TO MINERALOGY. (3 credits; 2 hours lecture, 3 hours laboratory). Crystal chemistry and identification of the principal rock-forming and ore minerals. Optional 2-day field trip.
Professor Francis

186-211B* INTRODUCTION TO CRYSTALLOGRAPHY AND CRYSTAL CHEMISTRY. (3 credits).
Professor Donnay

186-220B† ELEMENTARY EARTH PHYSICS. (3 credits).

186-231E FIELD SCHOOL I. (3 credits; two-week field school in May; Prerequisite: 186-203B or permission of instructor). Geological mapping of selected areas, preparation of maps, reports from field notes, aerial photographs, etc.
Professor Hynes

186-233B HISTORICAL GEOLOGY. (3 credits; 3 lectures). Relative and absolute time scales; principles of stratigraphy; evolution of oceans and continents through time, with special reference to North America.
Professor Stearn

186-234A INTRODUCTORY PALEONTOLOGY. (3 credits; 2 lectures and 1 laboratory period). Nature of the fossil record, paleoecology, evolution as displayed in the fossil record, history of life. The fossils of invertebrate phyla are studied in the laboratory.
Professor Stearn

186-242A GEOMORPHOLOGY. (3 credits; 2 lectures and 1 laboratory period; Weathering, mass wasting, erosional and depositional landforms produced by surface processes; relationship of topography to lithology and structure.
Professor Elson

186-243B ENVIRONMENTAL GEOLOGY. (3 credits; 2 hours lectures, 1 conference). Introduction to the relationship of geological factors to the human environment; optimum land and mineral use, natural hazards, ground water, engineering and urban geology.
Professors Eakins and Grice

186-303A STRUCTURAL GEOLOGY II. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisite: 186-203B). Folding mechanisms, polyphase deformation, regional structural analysis, rheology, structure of the lithosphere, tectonic features of the crust, orogenesis, theories of orogenesis. (Not open to students who have taken 186-303D).
Professor Hynes

186-310A INTRODUCTORY PETROLOGY I. (3 credits; 2 lectures and 3 hours laboratory; Prerequisite: 186-210A). First half of a survey of igneous, sedimentary, and metamorphic rocks and processes leading to their formation. Emphasis in the laboratory on hand specimen description and classification, supplemented by thin sections. (Not open to students who have taken 186-310D).
Professors Hesse, Martin and Mountjoy

186-311B INTRODUCTORY PETROLOGY II. (3 credits; 2 lectures and 3 hours laboratory; Prerequisite: 186-210A). Second half of a survey of igneous, sedimentary, and metamorphic rocks and processes leading to their formation. Emphasis in the laboratory on hand specimen description and classification, supplemented by thin sections. (Not open to students who have taken 186-310D).
Professors Hesse, Martin and Mountjoy

186-312B OPTICAL MINERALOGY. (3 credits; 6 hours laboratory and relevant in-lab. lectures; Prerequisite: 186-210A). Optical properties of non-opaque minerals with an emphasis on their determination in thin section.
Professor Francis

186-331E FIELD SCHOOL II. (3 credits; two-week field school in May; 2 hours lectures or seminars per week in 2nd term). Geological field study of igneous, sedimentary and metamorphic terrains, including preparation of stratigraphic sections, and edited field notes.
Professors Hesse, Francis and Staff

186-332A ANALYSIS OF GEOLOGICAL DATA I. (3 credits; 3 lectures, computer laboratory and problems). Statistical analysis and computing methods applied to geological problems.
Professor Doig

186-344A ORE MINERALS. (3 credits; 2 lectures, 3 hours laboratory; Prerequisite: 186-210A). Microscopic identification of ore minerals, interpretation of ore textures, sulphide and oxide structures, phase equilibria, ore minerals in aqueous systems, isotopes as a guide to ore genesis.
Professor Williams-Jones

186-347B PHASE EQUILIBRIA IN GEOLOGY. (3 credits; 3 hours lectures; Prerequisites: 186-210A, 211B, 310A, 311B, Chemistry 213A or B). Fundamentals of phase equilibria, application of thermodynamics to petrology, open and closed natural systems, partition of elements among mineral phases, applications to geothermometry.
Professor Martin

186-421A† CRUSTAL AND REGIONAL GEOPHYSICS. (3 credits).
Professor Saull

186-422B† GLOBAL GEOPHYSICS. (3 credits).
Professor Saull

186-423A IGNEOUS PETROLOGY. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisites: 186-347B, 312B). Physical properties, nucleation, crystallization, differentiation and emplacement of magmas. Integrated studies on various rock suites.
Professor Martin

186-430B GEOLOGY OF ENERGY SOURCES. (3 credits; 2 lectures and 2 hours laboratory or seminar; Corequisite: 186-442A, -444B or permission of the instructor). Properties, origin, migration and occurrence of petroleum and natural gas. Canadian oil fields. Structural and stratigraphic reservoirs and their characteristics. Oil shales, coal, peat, radioactive minerals and solar energy sources.
Professor Mountjoy

186-431B GLACIAL AND PLEISTOCENE GEOLOGY. (3 credits; 2 hours lectures and 1 laboratory of lecture period; Prerequisite: 186-242A or permission of the instructor). Introductory glaciology and glacial geology. The geological record of the Quaternary Era.
Professor Elson

• **186-433B ANALYSIS OF GEOLOGICAL DATA II.** (3 credits; 3 hours lectures). Advanced methods of statistical analysis applied to geological problems.
Professor Doig

186-441D MINERAL DEPOSITS. (6 credits; 2 lectures and 1 laboratory period; Prerequisite: 186-347B, -344A). Nature, origin and mode of occurrence of deposits of metallic and of important non-metallic minerals; typical occurrences; geographical distribution.
Professor Maclean

186-442A SEDIMENTARY ROCKS AND STRATIGRAPHY I. (3 credits; 2 lectures and 1 laboratory period; 2 days field work in October; Prerequisites: 186-310A, 311B, 312B). First half of a survey of physical processes of sedimentation, sedimentary structures and modern and ancient sedimentary environments. Diagenesis and geochemistry. Sedimentary mineral deposits. Facies associations. Basin analysis. Stratigraphic correlation.
Professors Hesse and Mountjoy

186-444B SEDIMENTARY ROCKS AND STRATIGRAPHY II. (3 credits; 2 lectures and 1 laboratory period; Prerequisites: 186-310A, 311B, 312B). Second half of a survey of physical processes of sedimentation, sedimentary structures and modern and ancient sedimentary environments. Diagenesis and geochemistry. Sedimentary mineral deposits. Facies associations. Basin analysis. Stratigraphic correlation.
Professors Hesse and Mountjoy

186-445B METAMORPHIC PETROLOGY. (3 credits; Prerequisites: 186-303A, 347B). The origin, classification and petrological significance of metamorphic rocks, from the point of view of theory, experiment and field observations.
Professors Hynes and Williams-Jones

186-446A ENGINEERING GEOLOGY. (3 credits; 2 lectures and 2 hours laboratory or lecture period; Prerequisite: Permission of instructor). Significance of geologic factors in foundation engineering and effects of man's activities in the geologic environment. Strength of materials. Construction materials, geological problems connected with foundations, tunnels, dams, etc.
Professor Grice

186-448A APPLIED GEOCHEMISTRY. (3 credits; 2 lectures and 1 laboratory period; Prerequisite: 186-347B or permission of instructor). Principles of geochemical prospecting and pertinent aspects of the geochemical behaviour of elements are studied. A field trip and laboratory work provide practical experience.
Professor Webber

186-449B GROUNDWATER GEOLOGY. (3 credits; 2 lectures and 2 hours laboratory or lecture period; Prerequisite: Permission of instructor). Introduction to the hydrological properties of geological formations, groundwater movement, and groundwater chemistry as applied to water supply, waste disposal, and other problems.
Professor Grice

186-480D GEOLOGICAL RESEARCH PROJECT. (6 credits; Prerequisite: for Honours students in 3rd year). A written proposal outlining the studies to be undertaken must be submitted to the undergraduate Student Adviser by May 1st of the U-2 year. The proposal will be reviewed by a committee and a decision forwarded by mail. If approved the investigation will be supervised by a staff member, and the results must be presented in the form of an undergraduate thesis.
Staff

186-481D† GEOPHYSICAL RESEARCH PROJECT. (6 credits).
Staff

186-482A,B,D, INDEPENDENT STUDIES IN GEOLOGICAL SCIENCES. (3 credits). Research and/or reading project enabling independent study under the guidance of qualified staff in areas of special interest to the student. A statement of the proposed project and the method of evaluation must be approved by the department curriculum committee before commencement of the course. This statement will be included in the student's file. May not be taken concurrently with 186-480D.
Staff

186-501A* CRYSTAL CHEMISTRY. (3 credits).
Professor Donnay

186-502A* CRYSTAL-STRUCTURE ANALYSIS. (3 credits).
Professor Donnay

186-503D* CRYSTAL-STRUCTURE DETERMINATION. (6 credits).
Professor Donnay

186-519A ISOTOPE GEOLOGY. (3 credits; 3 lectures; Prerequisites: U2 core program). Geochronology, the fractionation of the stable isotopes, and applications to petrology and mineral deposits.
Professor Doig

186-534D ADVANCED INVERTEBRATE PALEONTOLOGY. (6 credits; 2 lectures and 1 seminar per week). The bias of the fossil record. Relationships of the phyla. Taxonomy, classification, paleoecology, functional morphology, and evolution of fossil invertebrates.
Professor Stearn

186-535A PHOTOGEOLOGY I. (3 credits; 1 lecture;l 3 hours tutorial; assignments; Prerequisites: 186-242A, and permission of the instructor). Identification of surficial deposits and bedrock lithology by the interpretation of vertical air photographs.
Professor Elson

186-536B PHOTOGEOLOGY II. (3 credits; 1 lecture; 3 hours laboratory and tutorial; assigned projects; Prerequisites; 186-242A, 186-203B, and permission of the instructor). Recognition of geological materials, continued; simple photogrammetry; problems in stratigraphy, structure, and plotting of planimetric geological maps; satellite and radar imagery. (Not open to students who have taken 186-492D or 186-535D).
Professor Eison

186-540A PHANEROZOIC GEOLOGY OF NORTH AMERICA. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisite: U2 Major sequence; Corequisite: U3 Major sequence). Systematic consideration of the geology of the Cordilleran, Appalachian, and Arctic provinces of North America with emphasis on structure, stratigraphy, crustal evolution and resources.
Professor Mountjoy

186-541B PRECAMBRIAN GEOLOGY. (3 credits; 3 hours lectures; Prerequisite: U2 Major sequence; Corequisite: U3 Major sequence). A systematic outline of the geology of the Canadian Shield, with additional emphasis on its tectonic evolution and distribution of ore deposits.
Professors Doig, Hynes and Mountjoy

395-697B MARINE GEOLOGY AND GEOCHEMISTRY. (3 credits; 3 lectures; Pre- or Corequisites: Geology 186-442A, 444B, 347B, or by permission). An introduction with emphasis on deep sea studies. Geophysical nature and morphology of the ocean basins. Geochemistry of pelagic deposits in relation to sea water composition. Deep sea stratigraphy and methods of correlation; the sedimentary record.
Professor d'Anglejan

The following courses are described in the *Announcement of the Faculty of Engineering;* Geological Sciences 186-221A, -232B, -440B.

GEOPHYSICS – SOLID EARTH (186)*

Solid Earth Geophysics is concerned with the gathering of quantitative information on the physical properties and processes of the solid earth, and the mathematical analysis of these data to learn the earth's state and behaviour (theoretical geophysics) or the location and nature of economically important mineral formations (applied geophysics).

Solid Earth Geophysics has connections with many disciplines, but principally with mathematics, physics, and geology, and prospective students should have aptitudes for these subjects. Some important divisions of Solid Earth Geophysics are: seismology and seismic exploration, earth tides, terrestrial heat flow, age of the earth, terrestrial magnetism and electricity, earth rotational dynamics, tectonophysics, and figure of the earth and gravity. In recent years achievements in Solid Earth Geophysics have enormously influenced both fundamental geological concepts and mineral exploration techniques, and rapid development continues.

Both Honours and Major programs provide sound introductions to the subject at their respective levels, and allow some additional specialization through electives. These programs are the particular concern of the Solid Earth Geophysics Group, comprising geophysicists of the Departments of Geological Sciences and Mining Engineering. Inquiries should be addressed to the Department of Geological Sciences.

*The Solid Earth Geophysics programs in the Faculty of Science are administered by the Department of Geological Sciences.

Courses with the prefix 306- are being revised. Consult the department for details.

MAJOR IN SOLID EARTH GEOPHYSICS

U1: Physics 198-241A,B, 251A,B -253B; Mathematics 189-222A,B, -223A (or -245A,B), -315A,B; Geology 186-210A, -203B; -231E (Field school, at close of session); 7 credits elective.

U2: Physics 198-242A,B; Mathematics 189-319A,B; Geology 186-220B, 310A, -311B, -332A (or Computer Science 308-200A,B); Mining 306-332A, -531A, -533B; 3 credits elective.

U3: Geology 186-303A, -421A, -422B, 433B; Mining 306-334B, -535A; 9 credits elective.

HONOURS IN SOLID EARTH GEOPHYSICS

U1: Physics 198-241A,B -251A, -253B, -261B; Mathematics 189-247A, -248A, -249B, -325B; Geology 186-203B, 186-210A.

U2: Physics 198-355A, -242A,B; Geology 186-310A, -311B, -220B, -203B, -231E (Field school); Mining 306-332A, -531A, -533B; 3 credits elective.

U3: Geology 186-303A, -332A (or Computer Science 308-200A,B), -433B, -421A, -422B, -481D; Mining 306-334B, -535A; 3 credits elective.

Course Descriptions

• *Denotes not offered 1982-83.*

186-220B ELEMENTARY EARTH PHYSICS. (3 credits; 3 hours lectures, one of which may be replaced by a conference). Physical properties of

the earth and the processes associated with its existence as inferred from astronomy, geodesy, seismology, geology, terrestrial magnetic and thermal effects, geochemistry, etc. Critical evaluation of hypotheses explaining the above.
Professor Saull

186-421A CRUSTAL AND REGIONAL GEOPHYSICS. (3 credits; Prerequisite: 186-220B). Geophysical properties and processes of the earth's crust and uppermost mantle, and their regional variations. The role of geophysics in the various subdivisions of geology, including geological mapping. Laboratory/field sessions: Techniques of measurement of geophysical properties of rocks, and monitoring of geophysical processes, including the design and use of digital and analogue electronic systems. (Not open to students who have taken 186-443D).
Professor Saull

186-422B GLOBAL GEOPHYSICS. (3 credits; Prerequisites: 186-421A, 186-220B). Geophysical descriptions, interactions, and hypotheses of origin and behaviour of the earth and its nearest neighbours, emphasizing global rather than regional aspects. Relations with geochemistry and cosmochemistry. Global tectonic models. (Not open to students who have taken 186-443D).
Professor Saull

186-481D GEOPHYSICAL RESEARCH PROJECT. (6 credits; for Honours Solid Earth Geophysics students in 3rd year). Under the supervision of one of the members of the Solid Earth Geophysics Group, the student will undertake an approved investigation and prepare the results in the form of a research paper.
Staff

Department of Mining and Metallurgy (Faculty of Engineering)

306-230B GEOPHYSICAL EXPLORATION 3(2-2-5). (Co-requisites: 189-261A,B, 189-263A,B or equivalents). Applications of seismic, gravity, magnetic, electrical and radioactive methods in petroleum and mineral exploration.
Professor Jensen

306-332A MATHEMATICAL APPLICATIONS IN GEOPHYSICS 3(2-3-4). (Prerequisites: 306-230B, 189-262A,B, 189-264A,B or equivalents). Techniques in the treatment of geophysical data including Fourier analysis, power-spectral analysis, linear filtering, least-squares and other modelling procedures. Emphasis is on numerical problems in data processing.
Professor Crossley

306-334B POTENTIAL THEORY IN GEOPHYSICS 3(2-3-4). (Prerequisite: 306-332A and/or consultation with instructor). Applications of potential theory to gravity, magnetic and resistivity modelling. Includes ambiguity and uniqueness of potential field data, computation of anomalies from simple bodies and use of characteristic curves.
Professor Crossley

306-531A GRAVITY AND MAGNETIC EXPLORATION METHODS 3(2-3-4). (Prerequisite: 306-230B or equivalent and consultation with instructor). Applications of gravity and magnetic methods in petroleum and mineral exploration with particular emphasis on instruments, field methods, and interpretation of results.
Professor Telford

306-533B ELECTRICAL PROSPECTING METHODS 3(2-3-4). (Prerequisite: 306-230B or equivalent and consultation with instructor). Applications of electrical methods in petroleum and mineral exploration with particular emphasis on instruments, field operations and interpretation of results.
Professor Telford

306-535A SEISMOLOGY 3(2-3-4). (Co-requisite: 306-332A or equivalent and consultation with instructor). Theory of seismic wave propagation, application of seismology in petroleum and mineral exploration: instrumentation, data acquisition, analysis and interpretation.
Professor Jensen

306-536B RADIOACTIVE AND WELL LOGGING METHODS 3(2-3-4). (Prerequisite: 306-230B and consultation with instructor). Seismic methods in mineral exploration and engineering geophysics. Radioactivity methods, instrumentation and interpretation of results. Well logging techniques with particular emphasis on instrumentation; interpretation of petroleum well logs; applications in mineral exploration areas.
Professor Telford

IMMUNOLOGY INTERDEPARTMENTAL HONOURS PROGRAM

The Honours program in Immunology is offered by three Departments: Biochemistry, Microbiology and Immunology and Physiology. The program is a rigid one which will prepare the student for graduate work in Immunology in any of the three participating departments.

All admissions to the honours program will be in U2, and a student must have obtained a U1 GPA of 3.10. Admission to U3 requires a GPA of 3.2 in U2. For graduation in the honours program, the student must complete a minimum of 90 credits, and achieve a CGPA of not less than 3.2. In addition, the five Immunology courses (528-314B, 507-503A, 528-527B, 552-419D, 552-513B) must be passed with a grade not less than B.

U1 students who are interested in the program are advised to register in the Faculty Program in either Biochemistry or Physiology. U1 students should inform their advisers of their intent to

enter the Honours Immunology Program in U2.

U2 students wishing to enter the program must apply in writing to Drs. P.A.L. Kongshavn and/or W.S. Lapp, Department of Physiology, Room 1137, McIntyre Medical Sciences Building, 3655 Drummond Street, Montreal, PQ H3G 1Y6, Telephone 392-3079, or Dr. J. Gordon, Department of Experimental Surgery, Room 319, Donner Building, McGill University, Telephone 392-4859, at least two weeks before the deadline for completion of the study plan forms. All candidates will be interviewed for admission. Enrolment is limited.

Students who do not maintain Honours standing must transfer their registration to the Faculty program in one of three participating Departments.

The course requirements are as follows:

U1: Biology 177-201A and 201B; Chemistry 180-204A, 180-214B; Mathematics 189-222A,B; Physiology 552-211D; Anatomy 504-261A.

NOTE: Students who have not taken the equivalent of Chemistry 180-212A,B, 180-222A,B and Mathematics 189-221A,B in CEGEP should complete these courses. Others may take Chemistry 180-257D or elective courses to complete 30 credits.

U2: Biology 177-301A, 177-302B; Biochemistry 507-311A, 507-312B; Chemistry 180-302A; Microbiology 528-211A, 528-314A; and 6 credits from the following: Biology 177-310B, Biochemistry 507-404B, Chemistry 180-313A, Mathematics 189-315A,B, Physiology 552-311A, -312B, -313B and 3 credits of elective courses.

U3: Biochemistry 507-450A, 507-503A; Microbiology 528-466B; Physiology 552-419D, 552-513B; and 6 credits from the following: Biology 177-476B, Biochemistry 507-454A, Biochemistry 507-456B or Physiology 552-411B, Biochemistry 507-404B, Physiology 552-311A, -312B, -313B, Chemistry 180-302A,B, Mathematics 189-315A, Microbiology 528-324A, 528-501D; and 6 credits of elective courses.

INSTITUTE OF OCEANOGRAPHY (395)*

*Formerly Marine Sciences Centre

Professors – M.J. DUNBAR *(Biology);* E.R. POUNDER *(Physics);* M.P. LANGLEBEN *(Physics);* J.B. LEWIS *(Vice-Chairman) (Director, Redpath Museum)*

Associate Professors – B.F. d'ANGLEJAN; R.G. INGRAM *(Director);* H.M. REISWIG *(Redpath Museum);* F. SANDER *(Director, Bellairs Research Institute).*

Assistant Professor – B.M. MARCOTTE

Associate Members – M.E. GOLDSTEIN *(Biology);* R. HESSE *(Geology);* ROGER KNOWLES *(Microbiology);* E.W. MOUNTJOY *(Geology);* S. ORVIG *(Meteorology)*

Eaton Building,
3620 University Street,
Montreal, PQ, H3A 2B2
Telephone: 392-5733.

395-537B ADVANCED INVERTEBRATE ZOOLOGY. (3 credits; Prerequisite: 177-348D). Descriptions of selected marine invertebrate taxa. Functional morphology, ecology and evolution. Feeding mechanisms; reproduction patterns; interactions with other marine organisms; laboratory techniques.

395-591D ADVANCED MARINE ECOLOGY. (6 credits). Primary and secondary production; physiological ecology, population dynamics, distribution analysis, and diversity of marine organisms.

Other courses given by staff members of the Institute of Oceanography are listed in the Announcement as follows: Biology 177-442D; Physics 198-309A, 198-319B.

MATHEMATICS (189)

Professors – J. CHOKSI *(Chairman);* M. BARR; W. BROWN; I. CONNELL; K. GOWRISANKARAN; M. HERSCHORN; C. HERZ; J. LAMBEK; M. MAKKAI; A. MATHAI; W. MOSER; T. OKUBO; B. RATTRAY; E. ROSENTHALL; H. RUBEN; V. SESHADRI; C. SOLIN; K. TAM; J. TAYLOR

Associate Professors — W. ANDERSON; M. BUNGE; C. COSTLEY; S. DRURY; A. EVANS; D. GILDENHUYS; W. JONSSON; J. LABUTE; W. LANGFORD; B. LAWRUK; S. MASLOWE; S. MELAMED; R. RIGELHOF; C. ROTH; K. RUSSELL; N. SANCHO; G. SCHMIDT; S. SHNIDER; G. STYAN; D. SUSSMAN; J. TURNER; R. VERMES; S. ZLOBEC

Assistant Professors – D. WOLFSON; K.J. WORSLEY

NSERC Fellow – B. MARSHALL

Faculty Lecturer – D. KINGSBURY

Special Lecturer – C.L.F. WATCHORN

Burnside Hall, Room 1005,
805 Sherbrooke St. West,
Montreal, PQ, H3A 2K6
Telephone: 392-5369.

Early mathematics consisted for the most part of empirical rules for performing operations on concrete objects by means of numerical processes. From this, mathematics has evolved to a discipline which is mainly characterized by its method of proof, its concern for a progressive broadening of its concepts, and by the search for mathematical entities and operations that repre-

sent aspects of reality. It is a subject which is pursued by many for its own sake, and regarded as part of the mainstream of human culture. Mathematics pervades modern society with an impact which, already immense, is rapidly growing.

The two principal divisions of mathematics are pure mathematics and applied mathematics. The pure mathematician is interested in abstract mathematical structures and in mathematics as an intellectual enterprise. The primary concern may not be with its utilitarian aspects or with the current needs of science and technology, although many problems in pure mathematics have developed from the sciences.

The applied mathematician is more interested in how mathematics can be used to study some aspects of the world. Mathematicians are engaged in the creation, study and application of advanced mathematical methods relevant to scientific problems. Statistical science and methodology todayis concerned with phenomena in which there is a background of uncertainty arising from inherent variability, and the investigator is obliged to arrive at decisions from limited contingent data generated by such phenomena. A key tool in statistics is the calculus of probability.

Some of the fields in which pure mathematicians work are algebra analysis, geometry, topology, number theory and foundations. Applied Mathematics which once referred to the applicationof mathematics to such disciplines as mechanics and fluid dynamics, has currently assumed a much broader meaning and embraces such diverse fields as communication theory, theory of optimization, theory of games and numerical analysis.

Mathematics offers many vocational possibilities. Such fields as teaching, computing, applied statistics and actuarial science offer opportunities for B.Sc. graduates. Opportunities to do original research in pure and applied mathematics are available in universities and similar institutions. Employment is to be found in financially or technologically oriented business firms.

The Department of Mathematics through its various programs attempts to provide courses to suit the diverse interests and attitudes within mathematics.

The Honours Program in Mathematics demands of the student a certain talent for abstraction in addition to a high level of competence in the use of mathematical tools. This program is intended for students who plan to workin an area where mathematical innovations may be needed. It is almost essential for students contemplating a career in mathematical research.

The Major Program involves the same subjects as the Honours Program but is less demanding in terms of abstraction. It is designed primarily for students who will need mathematical tools in their work but whose creative activity will involve applications of mathematics to other areas, but not to mathematics itself. Within the framework of the mathematics major, various combinations of courses are suggested to meet the needs of different students. These include course suggestions for secondary school teachers, careers in management, and for careers in industry, government or actuarial sciences.

It is possible for Major students to include a number of Honours courses in their programs. This will be an advantage for those students who plan to use their mathematics in graduate studies.

Students interested in a less intensive mathematics program linked to other disciplines are advised to consider the available Faculty Programs.

In planning their programs students are advised to seriously consider developing some depth in another discipline – preferably one for which mathematics has some relevance and use. Mathematics has always been closely linked to areas such as physics and engineering but has recently come to play an increasingly important role in fields such as biology, linguistics, management and psychology.

FACULTY PROGRAMS

Programs linking mathematics and other disciplines are available. With careful selection of courses in U1, it is possible to transfer to a Major program in Mathematics in U2. Except where otherwise noted these faculty programs lead to a B.Sc. degree. See details at the beginning of the Science section.

MAJOR PROGRAM

Extensive revisions are contemplated in this program for 1982-83 which will not be finalized until later in the year. Prospective students should therefore make sure that they contact the Department concerning such changes.

Programs of study for students entering U1 in 1982-83.

The compulsory courses are 189-120A,B, -121A,B, -221A,B, -222A,B, -245A,B.

Advisers will approve a program of 54 credits including 48 credits in Mathematics (excluding 120A,B, 121A,B, 221A,B) of which at least 36 credits will be selected from the following: 189-217A, -218B, -242A, -243B, -246A,B, -314A,B, -315A,B, -316B, -317A,B, -318A,B, -319B, -320A, -323A,B, -324A,B, -327B, -328B, -333A, -343A, -346B, -348A, -349B, -360A, -369D, -407B, -414B, -415A, -416A, -417A, -419B, -423A, -424B, -425A, -427B, -447. The remaining 6 credits to be selected from Mathematics or a related discipline in consultation with the Adviser.

An honours course may be substituted for an equivalent major course. When qualified,

students are encouraged to do so. Honours courses count without restrictions towards the 36 credits mentioned above.

Guidelines for Selectionof Courses in the Major Program

All students are advised to include the following courses in their program: 189-246A,B, -314A,B, -315A,B, -317A,B, -323A,B, -324A,B, 308-202A,B.

a) Students planning to pursue graduate studies are advised to include 189-242A, -243B and -333A in their program, and to consider substituting one or more Honours courses for the corresponding courses in the Major program.

b) Students considering a career in teaching are advised to include in their program the following courses: 189-217A, -218B, -242A, -318A,B, -328B, 338A, 346B, 348A, -349B.

c) Students interested in probability and statistics are advised to also include in their program the following courses: 189-242A, -407B, -414B, -423A, -424B, -425A, -447B, as well as a course in programming languages such as 308-202A,B. With the instructor's permission thegraduate courses 189-682A, 308-690A, -691B might also be included.

d) Students interested in applied mathematics are advised to include in their program some or all of the following courses: 189-218B, -242A, -316B, -319B, -323A,B, -324A,B, -327B, -407B, -415A, -416A, -417A,-419B, -427B, 308-202A,B.

e) Students interested in computer science are advised to register in the following courses: 189-318A,B, -327B, 328B, -417A, -427B, 308-202A,B, 302B; they should choose additional courses from 189-319B, -415A, -416A, -419B, -423A, -424B, -425A, -447B, -308-640D*, -610A*, -690A*, -691B* or -698A* and -699B*

f) Students interested in careers in actuarial work in industry or government are advised to select courses from the following list: 189-319B, -327B, -328B, -329D, -369D, -415A, -416A, -417A, -419B, -423A, -424B, -425A, -447B, -308-200A,B.

The student's attention is called to the fact that a B.Com. degree with a Major in Mathematics is available from the Faculty of Management. In addition the Faculty of Music offers the B.Mus. degree with Honours in Theory with Mathematics Option.

*These courses require special permission from the instructors.

HONOURS PROGRAM

The minimum requirement for entry into the Honours Program is that the student has completed with high standing the following courses (or their equivalents); 189-120A,B, -121A,B, -221A,B.

Requirements for Honours in Mathematics

For an Honours Degree in Mathematics the student must obtain 90 course credits; at least 60 of these should correspond to Honours courses (or their equivalent), not less than 45 to Honours courses in Mathematics. In addition to the latter, the student may count towards the 60 credit Honours requirement:

i) half of the courses taken from the Major Program in Mathematics (including Computer Science courses) for which no equivalent Honours course exists;

ii) (with the approval of the Department of Mathematics) certain courses in other departments which are at an Honours level, and are closely linked to Mathematics,

iii) (with the approval of the Department of Mathematics) half the courses taken in other departments, which while not necessarily explicitly mathematical in nature, are at an Honours level and broaden the student's scientific training. Students who transfer to Honours in Mathematics from other programs will have credits for previous courses assigned, as appropriate, by the Department.

The following courses are compulsory: 189-250A, -251B, -254A, -255B, -371D, -372D.

To remain in the Honours Program, and to be awarded the Honours Degree, the student must maintain a 2.8 Grade Point Average in the approved Mathematics courses of the Honours program.

Guidelines for Selection of Courses in the Honours Program

a) The compulsory courses may be spread over the three years of study.

b) Students taking 189-250A, -251B and 189-254A, -255B simultaneously are advised to register also for 189-258A, -259B.

c) Students are advised to include in their program the following courses: 289-356A, -357B, -374D, -380D.

d) Students interested in Statistics should register for 189-556A, -557B and-587A, -589B in addition to -356A and -357B.

e) Students in Applied Mathematics should register for some or all of the courses 189-574A, -575B, -578A and -579B, -585A,

-586B in addition to -374D. They are also advised to select courses in areas to which they can apply their mathematics.

f) Students interested in Computer Science should register for 308-250A.

HONOURS PROGRAM IN MATHEMATICS AND COMPUTER SCIENCE

Credit requirements are as follows:

A. Core Courses (compulsory)
1. Computer Science (30 credits)
308-250, -273, -302, -305, -310, -317, -400, -405, -530 and 189-578.
2. Mathematics (34 credits)
189-250, -251, -254, -255, -258, -259, -371, -372.

B. Special Electives (9 credits)
Mathematics 189-356, -377, -416, 489, -490, -579.
Computer Science 308-415, -424, -425, -540, -566, -567, -573.

Students should consult honours advisers from both Departments.

Course Descriptions

• *Denotes not offered 1982-83.*

189-112A,B FUNDAMENTALS OF MATHEMATICS. (3 credits). The real and complex numbers, equations and inequalities, graphs, relations and functions, exponential and logarithmic functions, trigonometric functions and their use, mathematical induction, binomial theorem.

189-120A,B CALCULUS I. (3 credits). Review of functions and graphs. Limits, continuity, derivative. Differentiation of elementary functions. Antidifferentiation. Applications.
Professor Moser and Staff

189-121A,B CALCULUS II. (3 credits; Prerequisite: 189-120A,B). The definite integral. Techniques of integration. Applications. Introduction to sequences and series.
Professor Moser and Staff

189-203A BASIC PRINCIPLES AND METHODOLOGY OF STATISTICS I. (3 credits). Typical examples of statistical data and the use of graphical means to summarize the data. Some basic distributions arising in the natural and behavioural sciences. The logical meaning of a test of significance with applications to single observations, sums, differences, and means. The analysis of categorical and frequency data. The interrelation of two variables. The use of correlation coefficients as exploratory tools. The t-test. (This course is intended for students in all disciplines and is not open to students in Major Mathematics. Not open to students who have taken or are taking 189-324. No calculus prerequisites.)

Note: Students who successfully complete this course need not take for credit certain other introductory statistics courses offered elsewhere in the university. A list of these courses is available in the Mathematics Department.
Professor Worsley

189-204B BASIC PRINCIPLES AND METHODOLOGY OF STATISTICS II. (3 credits; Prerequisite: 189-203A or equivalent). The concept of degrees of freedom and the analysis of variability. Planning of experiments. Some useful experimental designs. Polynomial and multiple regressions. Use of statistical computer packages (no previous computing experience is needed). General statistical procedures requiring few assumptions about the probability model. (This course is intended for students in all disciplines and is not open to students in Major Mathematics. Not open to students who have taken or are taking 189-324. No calculus prerequisites.)

Note: Students who successfully complete this course need not take for credit certain other introductory statistics courses offered elsewhere in the university. A list of these courses is available in the Mathematics Department.
Professor Worsley

• **189-205A FINITE MATHEMATICS.** (3 credits). An introduction to probability, vectors and matrices with applications to the social sciences. (Not open to students who have taken or are taking 189-231, -323).

189-217A ABSTRACT ALGEBRA I. (3 credits). Sets, mappings, relations and operations, rings and their properties, integral domains, properties of the integers, fields, rational and real numbers, complex numbers.
Professor Russell

189-218B ABSTRACT ALGEBRA II. (3 credits; Prerequisite: 189-217A or equivalent). Groups and their elementary properties, permutation groups, cyclic groups, normal subgroups, cosets and quotient groups. Properties of polynomials, factorization, roots.
Professor Russell

189-221A,B VECTORS, MATRICES AND ANALYTIC GEOMETRY. (3 credits). Matrices, determinants, systems of linear equations and linear dependence. Vectors, inner products and cross products, lines and planes in three dimensions and conics. (Not open to students who have taken CEGEP course 201-105).
Professor Solin and Staff

189-222A,B CALCULUS III. (3 credits; Prerequisites: 189-121A,B and 189-221A,B or equivalent). Taylor series, Taylor's theorem in one and several variables. Partial differentiation, directional derivative. Extrema of functions of 2 or 3 variables. Parametric curves and arc length. Polar and spherical coordinates. Multiple integrals.
Professor Solin and Staff

189-223A,B LINEAR ALGEBRA. (3 credits; prerequisite: 189-221A,B or equivalent). Review of matrix algebra, determinants and systems of linear equations. Vector spaces, linear operators and their matrix representations, unitary vector spaces, othogonality. Eigenvalues and eigenvectors, diagonalization of Hermitian matrices. Applications. (This course covers most of the topics in 189-245, -246. It is not open to students in Major Mathematics nor to students who have taken or are taking 189-224, -245, -247).

189-224A,B APPLIED MATRIX ALGEBRA. (3 credits). Matrix addition, multiplication, transposition, partitioning. Simultaneous linear equations: Gaussian elimination, Gauss-Jordan reduction. Consistency. Rank and inverse. Null space. Formulation of practical problems in matrix notation: input-output analysis. Geometrical applications: angle, distance, area. Least-squares approximations. Determinant, trace, eigenvalues, eigenvectors. Markov chains. Introduction to linear programming and simplex method. Emphasis towards applications in business and management. (Intended for students interested in applications of matrix algebra to Management, Social Sciences, and similar fields of endeavour. (THis course is not open to students in Major Mathematics nor to students who have taken or are taking 189-223, -234, -245, -247).
Professors Stein and Zlobec

189-231A,B MATHEMATICS FOR BIOLOGISTS. (3 credits; Preequisite: 189-121A,B). Introductory probability theory, vectors and matrices, differential and difference equations with applications to the biological sciences. (This course is not open to students in Major Mathematics nor to students who have taken or are taking 189-205, -323).

189-232B MATHEMATICAL METHODS IN BIOLOGY AND BEHAVIOURAL SCIENCES. (3 credits; Prerequisite: 189-231A,B or equivalent). Topics in probability and statistics, linear programming, and game theory with applications to the behavioural and biological sciences. (This course is not open to students in Major Mathematics nor to students who have taken or are taking 189-323).

189-233A MATHEMATICS FOR ECONOMISTS I. (3 credits). Elements of Elementary Calculus. Functions of several variables. Partial Derivatives. Jacobians. Maxima and Minima. Lagrange Multipliers. Hessians. Infinite Series. Economic Applications. (This course is intended for students in Economics; others may be permitted to enrol with special permission; not open to students in programs in Mathematics; not available for credit to students in the Faculty of Science).

189-234B MATHEMATICS FOR ECONOMISTS II. (3 credits). Matrices. Transpose. Trace of a matrix. Inverse. Determinants. Orthogonal matrices. Idempotency. Non-negative matrices. Input-output analysis. Inequalities. Linear dependence and independence. Rank. Least-squares problems. Linear transformations. Characteristic roots and vectors. Quadratic forms. Generalized inverses. Systems of linear equations. Gaussian elimination and Gauss-Jordan reduction. Economic applications. (This course is intended for students in Economics; others may be permitted to enrol with special permission; not open to students in programs in Mathematics; not available for credit to students in the Faculty of Science, nor to students who have taken or are taking 189-223, -224, -245, -247).
Professor Stein

189-242A REAL ANALYSIS I. (3 credits). Real numbers. Introduction to metric spaces. Sequences. Limits and continuity.
Professor Herschorn

189-243B REAL ANALYSIS II. (3 credits; Prerequisite: 189-242A). Continuity and differentiability on the real line; basic theorems. Taylor's theorem and applications. Infinite series.
Professor Herschorn

189-245A,B LINEAR ALGEBRA I. (3 credits; Prerequisite 189-221A, B or equivalent). Review of matrix algebra, systems of linear equations, and determinants. Subspaces of R^n. Rank, bases and dimension. Eigenvectors and eigenvalues, diagonalization of matrices. Orthogonal matrices. Quadratic forms, positive definiteness and classification of central quadrics. (Not open to students who have taken or are taking 189-223, 189-224, 189-234 or 189-247).

189-246A,B LINEAR ALGEBRA II. (3 credits; Prerequisites: 189-121A,B, 189-245A,B). Abstract vector spaces over the real and complex numbers. Linear operations, matrix representations. Vector and operator norms. Eigenvectors and eigenvalues. Linear, quadratic and Hermitian forms. Inner product spaces, unitary and orthoganal transformations, the adjoint of an operator, self-adjoint and normal operators. Applications to differential equations. (Not open to students who have taken or are taking 189-247).

189-247A LINEAR ALGEBRA. (3 credits; Prerequisite: 189-221A,B or equivalent). Matrix algebra, determinants, systems of linear equations. Abstract vector spaces, orthogonality of vectors and subspaces, inner products, orthogonal bases. Eigenvalues and eigenvectors, diagonable and defective matrices, positive definite and semidefinite matrices. Quadratic and Hermitian forms, generalized eigenvalue problem, simultaneous reduction of quadratic forms. Linear transformations and their matrix representations, coordinate vectors, change of basis. (THis course is intended for Physics students

and others suitably qualified. Not open to students who have taken or are taking 189-246 and -223).
Professor Melamed

189-248A,B ADVANCED CALCULUS I. (3 credits; Prerequisites: 189-221A,B and 222A,B or consent of Physics Department). Partial derivatives; implicit functions; Jacobians; maxima and minima; Lagrange multipliers. Scalar and vector fields; orthogonal curvilinear coordinates. Improper integrals; multiple integrals; arc length, volume and surface area. Line integrals; Green's theorem; the divergence theorem. Stokes' theorem; irrotational and solenoidal fields; applications. (This course is intended for Physics students and others suitably qualified. Not open to students who have taken or are taking 189-314).
Professor Rigelhof

189-249B ADVANCED CALCULUS II. (3 credits; Prerequisite: 189-248A). Functions of a complex variable; Cauchy-Riemann equations; Cauchy's theorem and consequences. Taylor and Laurent expansions. Residue calculus; evaluation of real integrals; integral representation of special functions; the complex inversion integral. Conformal mapping; Schwarz-Christoffel transformation; Poisson's integral formulas; applications. (This course is intended for Physics students and others suitably qualified. Not open to students who have taken or are taking 189-316).
Professor Righelhof

189-250A ALGEBRA I (Part I). (4 credits). Basic linear algebra; fundamental concepts of algebra; the rational, real and complex fields.
Professor Connell

189-251B ALGEBRA I (Part II). (4 credits; Prerequisite: 189-250A). Further linear algebra with applications to geometry; further general algebra.
Professor Connell

189-254A ANALYSIS I (Part I). (4 credits. The real number system, metric properties on R^m, convergence continuity.
Professor Gowrisankaran

189-255B ANALYSIS I (Part II). (4 credits; Prerequisite: 189-254A). Continuity, series, Riemann integration, multivariable differential calculus.
Professor Gowrisankaran

189-258A PROBLEM SEMINAR (Part I). (2 credits; 2 hours conference). The course complements Algebra I and Analysis I. Emphasis is on solving problems in elementary and advanced calculus with a view towards applications. Some problems using Linear Algebra may also be considered.
Professor Vermes

189-259B PROBLEM SEMINAR (Part II). (2 credits; 2 hours conference). Course description as for 189-258A.
Professor Vermes

189-314A,B ADVANCED CALCULUS. (3 credits; Prerequisite: 189-222A,B). Constrained maxima and minima. Jacobians. Multiple integration. Line and surface integrals. Theorems of Green, Stokes and Gauss. Introduction to elliptic integrals. (Not open to students who have taken or are taking 189-248).
Professor Gowrisankaran

189-315A,B ORDINARY DIFFERENTIAL EQUATIONS I. (3 credits; Prerequisite: 189-222A,B). First order ordinary diferential equations. Linear equations with constant coefficients, Laplace transform. Series solutions. (Not open to students who have taken or are taking 189-325).
Professor Lawruk and Staff

189-316B FUNCTIONS OF A COMPLEX VARIABLE. (3 credits; Prerequisite: 189-314A,B). Algebra of complex numbers, Cauchy-Riemann equations, complex integral, Caughy's theorems, Taylor and Laurent series, residue theory and applications. (Not open to students who have taken or are taking 189-249).
Professor Turner

189-317A,B INTRODUCTION TO NUMERICAL ANALYSIS. (3 credits; Prerequisites: 189-222A,B, 308-200A,B or equivalent). Error analysis. Numerical solutions of equations by iteration. Interpolation. Numerical integration. Introduction to numerical solutions of differential equations. Programming assumed. Some lab. work necessary.
Professor Evans

189-318A,B MATHEMATICAL LOGIC. (3 credits). Propositional calculus, truth-tables, switching circuits, natural deduction, first order predicate calculus, axiomatic theories, set theory.
Professor Lambek

189-319B DIFFERENTIAL EQUATIONS. (3 credits; Prerequisites: 189-245A,B, -314A,B, -315A,B). Partial differential equations of mathematical physics. Boundary value problems, classification of partial differential equations, method of characteristics. Fourier expansions. Introduction to Sturm-Liouville theory.
Professor Lawruk

189-320A GEOMETRY AND TOPOLOGY. (3 credits; Prerequisite 189-314A,B; or permission from the instructor). *Given in alternate years.* A study of curves and surfaces in R^3 with a view to motivating basic notions of differential geometry, algebraic topology and differential topology. This course is intended for mathematics major students and those who lack the time or prerequisite to join 380D. The lecture of the two courses will coincide for the first term; however, students of 189-320A will be examined at the end of the first term, while students in 189-380D will continue on in the second term. (Honours credit available only through registration in 189-380D).

189-323A,B INTRODUCTION TO PROBABILITY THEORY AND RANDOM VARIABLES. (3 credits; Prerequisites: 189-121A,B or equivalent). Sample space, events. Conditional probability, independence. Bayes' theorem with applications. Random variables, univariate distributions. Mathematical expectation, moment generating function. The binominal, Poisson, exponential, normal and other distributions. Joint distributions, transformation of variables. The weak law of large numbers. Sampling distributions, chi-squared, student-t, F variables. The Poisson process, with applications. The central limit theorem. (This course is intended for students in science, engineering and related disciplines, who have had differential and integral calculus. Not open to students who have taken or are taking 189-203, -204, -232, -356).
Professor Mathai and Staff

189-324A,B INTRODUCTION TO STATISTICS. (3 credits; Prerequisite: 189-323A,B or equivalent). The notion of a random sample. Sampling distributions, with particular reference to those related to the normal: chi-squared, F and t (revision). Point estimation. Hypothesis testing, the notion of power function. Likelihood-ratio tests. Contingency tables, goodness-of-fit and homogeneity tests. Some nonparametric procedures. Regression and the method of least squares, analysis of variance, one-way and two-way classifications randomized block. Latin square designs. (Not open to students who have taken or are taking 189-357).
Professor Mathai and Staff

189-325B ORDINARY DIFFERENTIAL EQUATIONS. (3 credits; Prerequisite: 189-222A,B). First order differential equations; second order linear equations; series solution of second order equations; Fourier series; self-adjoint boundary value problems; Legendre polynominals and Bessel functions. (THis course is intended for Honours Physics students and others suitably qualified. Not open to students who have taken or are taking 189-315).
Professor Tam

189-327B MATRIX NUMERICAL ANALYSIS. (3 credits; Prerequisites: 189-223A,B or 189-245A,B. Corequisite 317A,B). Numerical methods for solving systems of linear algebraic equations, matrix inversion and eigenvalue problems. Introduction to differential boundary value problems.
Professor Zlobec

189-328B COMPUTABILITYANDM ATHEMATICAL LINGUISTICS. (3 credits). Calculability on an infinite abacus is compared with recursive functions and Turing machines. Categorial, context-free, generative and transformational grammars are studied for formal and natural languages, with some emphasis on English and French morphology.Machines for generating and recognizing sentences are discussed.
Professor Lambek

189-329D THEORY OF INTEREST AND LIFE INSURANCE. (6 credits; Prerequisite: 189-121A,B). Simple and compound interest, discount, annuities certain, sinking funds, bonds, mortgage amoritization, depreciation, calculation of life annuities, premiums and reserves on life insurance policies.
Professor Solin

189-333A ANALYSIS. (3 credits; Prerequisite: 189-243B). *Given in alternate years.* Riemann-Stielties integral; sequences and series of functions; metric spaces; connectedness; completeness and compactness; Weierstrass approximation theorem; Fourier series.

189-338A TOPICS IN HISTORY AND PHILOSOPHY OF MATHEMATICS. (3 credits). Egyptian, Babylonian, Greek, Indian and Arab contributions to mathematics are studied together with some modern developments they give rise to, for example, the problem of trisecting the angle. European mathematics from the Renaissance to the 18th century is discussed in some detail.
Professor Lambek

189-339B TOPICS IN THE FOUNDATIONS OF MATHEMATICS. (3 credits; Prerequisites: 189-217A and 189-318A,B.) Topics are chosen mainly from 19th and 20th century mathematics, with some emphasis on philosophical and foundational problems. Sample topics are: progress in number theory, construction of the number system, infinity according to Cantor, logic and foundations from Aristotle to Cohen, Gödel's incompleteness theorem, calculability and programs, formalism versus intuitionism, abstract mathematics and categories. (Students enrolled in both 189-338 and 189-339 will only be able to count three credits toward their major program in Mathematics.)
Professor Lambek

189-343A DISCRETE MATHEMATICS AND APLLIED ALGEBRA (3 credits; prerequisites: any half course in linear algebra and some familiarity with infinite series). An introductory course in "Discrete Mathematics", including topics from some of the following areas: Combinatorial Analysis; Graphs and Networks, Flows; Finite State Machines; Propositional Calculus, Boolean Algebras, Switching Circuits; Groups, Finite Fields, Polynomials. Algebraic Coding Theory.
Professor Brown

189-346B NUMBER THEORY. (3 credits). Divisibility. Congruences. Quadratic reciprocity. Diophantine equations. Arithmetical functions.
Professor Rosenthall

189-348A TOPICS IN GEOMETRY I. (3 credits; Prerequisite: Previous course in Mathematics). Selected topics – the particular selection may vary from year to year. (The topics include isometries in the plane, symmetry groups of frieze and ornamental patterns, equidecom-

posibility and non-Euclidean geometry).
Professor Moser

189-349B TOPICS IN GEOMETRY II. (3 credits; Prerequisite: Previous course in Mathematics). Selected topics – the particular selection may vary from year to year. (The topics include rubber-sheet geometry: classification of surfaces, path problems, map-colour problems; convexity, curves of constant width, combinatorial geometry).
Professor Moser

189-356A INTRODUCTION TO PROBABILITY. (3 credits). General foundations and applications. Combinatorial probability. The binomial, Poisson, and normal distributions. Central limit theorem.
Professor Mathai

189-357B INTRODUCTION TO STATISTICS. (3 credits; Prerequisite: 189-356A or equivalent). Data analysis. Estimation and hypothesis testing. Power of tests. Likelihood ratio criterion. The chi-squared goodness of fit test. Introduction to regression analysis and analysis of variance.
Professor Mathai

• **189-360A GROUPS AND THEIR REPRESENTATIONS.** (3 credits; prerequisite: a course in Linear Algebra). *Given in alternate years.* Elements of group theory. Symmetry groups. Unitary vector spaces, linear operators and their matrix representations, invariance of functions and operators, classification of eigenfunctions. Reducibility, Schur's lemmas, general orthogonality relations, character tables. Kronecker product and adjoint representations, Hermitian invariants, Clebsch-Gordon series. Characters of the symmetric group applications.

189-369D THEORY OF INTEREST AND LIFE CONTINGENCIES. (6 credits; Prerequisite: 189-222A,B). Theory of interest and of single and multiple life functions.

189-371D ALGEBRA II. (6 credits; Prerequisite: 189-250A, -251B). Commutative algebra (modules over a principal ideal domain, extensions of the rationals, unique factorization domains); field theory to include the fundamental theorem of Galois theory; group theory continued up to the Sylow theorems; the Jordan-Hoelder theorem.
Professor Rattray

189-372D ANALYSIS II. (8 credits; Prerequisite: 189-254A -255b). Metric spaces; Lebesque-Stieltjes integration; series expansions of functions (including L_2 theory); power series; analytic functions; contour integration; Cauchy's theorem and a wide variety of consequences, normal families.
Professor Drury

• **189-373D PROBLEM SEMINAR.** (4 credits; 2 hours conference). Course intended to develop problem solving ability.

189-374D ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS. (6 credits; Prerequisites: 189-246A,B, or -251B; -255B; or both -243B and 314A,B). Existence and uniqueness theorems, linear ordinary differential equations and systems, the phase plane, introduction to nonlinear systems and stability, power series solutions, regular singular points, Sturm-Liouville problems, eigenfunction expansions, Laplace's equation, wave and heat equations, elementary boundary value problems, Fourier transforms, distributions.
Professor Tam

189-377B NUMBER THEORY. (3 credits; Prerequisites 250A, 189-251B). *Given in alternate years.* (Students not enrolled in the Mathematics Honours Programme must obtain permission of the instructor or an Honours Adviser). An elementary course in number theory directed to honours students in mathematics.

189-380D GEOMETRY AND TOPOLOGY. (6 credits; Prerequisites: 189-250A, -251B, -254A, -255B). *Given in alternate years.* A study of curves and surface in R^3 with a view to motivating basic notions of differential geometry, algebraic topology and differential topology. Introduction to manifolds, vectorfields and differential forms, Stokes' theorem, Frobenius' theorem, connections and curvature.

189-407B DYNAMIC PROGRAMMING. (3 credits; Prerequisites: Knowledge of computer programming language 189-245A,B -314A,B, 315A,B and 323A,B). Sequential decision problems, resource allocation, transportation problems, equipment replacement, inventory systems, calculus of variations, markovian decision processes, stochastic path problems, reliability, discrete and continuous control processes.
Professor Sancho

189-414B MATHEMATICAL MODELS IN APPLICATIONS. (3 credits; Prerequisites: 189-245A,B, -323A,B, (or -231A,B, -232A,B), -315A,B). *Given in alternate years.* Models and theories from physics, economics, biology and medicine. Derivation of equations of mathematical physics, input-output models in economics, competition models in economics and ecology, epidemic models, provision of health care models.
Professor Sancho

189-415A ORDINARY DIFFERENTIAL EQUATIONS II. (3 credits; Prerequisites: 189-246A,B, -315A,B, 189-242A or -314A,B). *Given in alternate years.* Theory of systems of linear differential equations, systems with constant coefficients, qualitative theory for periodic systems and for more general systems, phase-plane analysis for linear systems.
Professor Maslowe

189-416A COMBINATORICS. (3 credits; Prerequisites: i) 189-222A,B, ii) one of 189-217A, -218B, -223A,B, -231A,B, -245A,B or equivalents). An introductory half-course in combinatorics intended for Mathematics Major students and others who lack the time or the prerequisites to enrol in 189-461D (Combinatorial Mathematics). The lectures of the two courses may coincide (for the First term); however, students of 189-416A will be examined at the end of the First term, while students in 189-461D will continue on in the Second term and be exposed to current research papers. (Honours credit is available only through registration in 189-461D).
Professor Brown

189-417A MATHEMATICAL PROGRAMMING. (3 credits; Prerequisites: 189-223A,B or 245A,B and -314A,B or equivalent). An introductory course in optimization by linear algebra methods. It covers linear programming (convex polyhedra, simplex method, duality, multi criteria problems) and some topics in nonlinear programming (convex functions, optimality conditions). Also representative applications in Agriculture, Economics, Engineering, Operations Research and Mathematics. Familiarity with computer implementation of mathematical programming methods will be acquired by working on individual (or small group) projects in students' chosen areas.
Professor Zlobec

189-419B VARIATIONAL METHODS OF APPLIED MATHEMATICS. (3 credits; Prerequisites: 189-245A,B -314A,B, -319B). *Given in alternate years.* Functionals, Euler-Lagrange necessary conditionfor an extremum, use of Lagrange multipliers in problems with constraints. Approximation techniques in eigenvalue problems; Rayleigh-Ritz and Galerkin methods. Applications selected from optimization, control theory and mathematical physics.

189-423A INTRODUCTION TO REGRESSION AND ANALYSIS OF VARIANCE. (3 credits; Prerequisites: 189-324A,B and-245A,B or equivalent). Multivariate normal and chi-squared distributions; quadratic forms; independence. Simple and multiple linear regression. Least squares estimators and their properties. Analysis of variance. Simple weighing designs. General linear model with full rank. General linear hypothesis: *F*-test and *t*-test. Prediction and confidence intervals. Assessing the adequacy of a model: lack of fit, residual plots, transformations, weighted least squares, stepwise regression, Durbin-Watson statistic.
Professor Styan

189-424B INTRODUCTION TO NONPARAMETRIC STATISTICS. (3 credits; Prerequisite: 189-324A,B). Tests of goodness of fit: Pearson's chi-squared test for multinomial populations. Contingency tables. Sign test – tests based on ranks, Mann-Whitney, Wilcoxon tests. Rank correlation. Order statistics. Tolerance regions.
Professor Wolfson

189-425A SAMPLING SURVEY THEORY AND APPLICATIONS. (3 credits; Prerequisites: 189-324A,B or eqivalent). Basic sampling designs and estimators; simple random, stratified, systematic, cluster and multistage sampling; balanced and quota sampling; sampling with unequal probabilities; ratio and regression techniques. Non-sampling errors.
Professor Worsley

189-427B NUMERICAL SOLUTIONS OF DIFFERENTIAL EQUATIONS. (3 credits; Prerequisites: 189-315A,B -317A,B or equivalent). *Given in alternate years.* Runge-Kutta and predictor-corrector methods applied to first and higher order systems. Error analysis, step size and stability. Some boundary value problems. Introduction to partial differential equations.

189-447B ELEMENTARY STOCHASTIC PROCESSES. (3 credits; Prerequisites: 189-245A,B, -323A,B). Random walk on the integers and gambler's ruin problem; the Galton-Watson branching process; Markov chains and their applicationsin the physical and social sciences; birth and death processes and their applications to biological growth problems.
Professor Anderson

189-461D COMBINATORIAL MATHEMATICS. (6 credits; Prerequisites: 189-242A or -254A or equivalent and -246A,B or -251B or equivalent). *Given in alternate years.* After a study of fundamentals (Partitions and compositions, principle of inclusion and exclusion, etc.) students will be introduced to combinatorial aspects of several fields (graph theory, designs, set theory, group theory, geometry, number theory, etc.) from classifical up to and including current research.

189-489A MATHEMATICAL LOGIC. (3 credits; Prerequisite: consent of instructor). Propositional logic and first order logic; completeness and compactness theorems. Introduction to model theory. Lindström's characterization of first order logic. If time allows, a selection of the following topics: Herbrand's theorem, Gentzen's calculus, Craig's interpolation theorem, Beth's definability theorem.
Professor Makkai

189-490B MATHEMATICAL LOGIC. (3 credits; Prerequisite: 189-489A). Introduction to recursion theory; recursively enumerable sets, relative recursiveness, Friedberg-Muchnik theorem. Incompleteness, undecidability and undefinability theorems of Gödel, Church Rosser and Tarski. Decidable and undecidable theories.
Professor Makkai

189-555A FLUID DYNAMICS. (3 credits; Prerequisites: 189-315A,B and -319B or equivalent). Kinematics. Dynamics of general fluids. Inviscid fluids, Navier-Stokes equations. Exact solutions of Navier-Stokes equations. Low Reynolds number flow. High Reynolds number flow.
Professor Tam

189-556A MATHEMATICAL STATISTICS I. (3 credits; Prerequisite: 189-357B). Probability and distribution theory including discussion of some basic distributions in space. Regression and correlation theory. Laws of large numbers and central limit theorem.
Professor Mathai

189-557B MATHEMATICAL STATISTICS II. (3 credits; Prerequisite: 189-556A). Sampling theory (including large-sample theory). Likelihood functions and information matrices. Hypothesis testing, estimation theory and decision theory. Distribution-free procedures.
Professor Mathai

189-571D HIGHER ALGEBRA. (6 credits; Prerequisite: 189-371D or equivalent). The rudiments of category theory, including adjoint functors; noetherian, artinian and semi-simple rings and modules; representations of finite groups; a continuation of commutative algebra, prime ideals, localisation; some algebraic number theory and a deeper study of field extensions.
Professor Gildenhuys

189-572D REAL AND COMPLEX ANALYSIS. (8 credits; Prerequisites: 189-250A, -251B, -372D). The theory of measure and integration, basic Hilbert and Banach space theory, complex analysis from a modern viewpoint.
Professor Marshall

- **189-574A ORDINARY DIFFERENTIAL EQUATIONS.** (3 credits; Prerequisite: 189-374D). *Given in alternate years.* Brief review of the basic theory from an advanced viewpoint, phase space and phase flows, stability theory, periodic systems, Floquet theory, additional topics such as: differential equations on manifolds, bifurcation theory, perturbation methods, boundary value systems and their adjoints, applications.

- **189-575B PARTIAL DIFFERENTIAL EQUATIONS.** (3 credits; Prerequisite: 289-374D). A continuation of topics introduced in189-374D.

- **189-578A NUMERICAL ANALYSIS.** (3 credits; Corequisite: 189-372D or approval of instructor). Basic error analysis; numerical solutions of nonlinear equations; interpolation; numerical integration and numerical solutions of ordinary differential equations.
Professor Evans

189-579B NUMERICAL ANALYSIS. (3 credits; Prerequisites: 189-250A, -251B or 327B). *Given in alternate years.* Basic linear algebra, spectral radius, vector and matrix norms. Numerical linear algebra, vector and matrix norms. Numerical linear algebra, solution of linear systems by direct and iterative methods, least squares solutions, computation of eigenvalues and eigenvectors, illconditioned systems. Solution of nonlinear systems of equations, Banach's fixed point theorem. Polynomial approximation, least-squares and uniform approximation. Boundary-value problems for different equations.

189-580A,B DIFFERENTIABLE MANIFOLDS I. (3 credits). Introduction to Differentiable manifolds, their geometry and applications. (Not open to students who have taken 189-581D).
Professor Rigelhof

189-581A,B DIFFERENTIABLE MANIFOLDS II. (3 credits). Topics in the geometry or applications of differentiable manifolds. (Not open to students who have taken 189-581D).
Professor Herz

189-583A TOPOLOGICAL SPACES. (3 credits; prerequisite: some knowledge of metric spaces). Bases, connectedness, convergence, product and quotient spaces, metrization, compactness, function spaces.
Professor Schmidt

189-585A,B INTEGRAL EQUATIONS AND TRANSFORMS. (3 credits). *Given in alternate years.* Integral transforms. Introduction to the theory of Hilbert spaces. Fredholm and Volterra integral equations; exact and approximate solutions. Equations with Hermitian kernels. Hilbert Schmidt theorem and consequences. Representation formulas for the solutions of initial and boundary value problems. Green's functions. Applications.
Professor Roth

189-586B ADVANCED BOUNDARY AND INITIAL VALUE PROBLEMS. (3 credits; Prerequisites: 189-316B, -374D, or equivalent). Partial differential equations of applied mathematics. Dirichlet and Neumann problems: complex variable methods. Homogeneous and non-homogeneous problems: Green's functions, integral transform methods, variational techniques. Perturbation theory. Application.

189-587A ADVANCED PROBABILITY THEORY I. (3 credits; Prerequisite: 189-356A or equivalent and approval of instructor). Basic measure and integration theory, with special reference to probability measures on (R^1, B^1). The carathéodory Extension Theorem. The Correspondence Theorem on R^1. Random variables. Expectation: basic properties and discussion of the basic inequalities. Independence of families of events and of random variables. The Kolmogorov 0-1 law and consequences. Convergence concepts: almost sure, inprobability, in L^p and their mutual relationships. Laws of large numbers: Khinchine's weak law. Kolmogorov's inequalities and three-series

theorem. The strong law. Applications of the laws of large numbers.
Professor Choksi

189-588D ALGEBRAIC TOPOLOGY. (6 credits). Introduction to homology and homotopy theory.

189-589B ADVANCED PROBABILITY THEORY II. (3 credits; Prerequisites: 189-587A or equivalent). Characteristic functions. Elementary properties. Inversion formula. Uniqueness, convolution and continuity theorems. Moments and characteristic functions, including finite and infinite series expansions for the latter in terms of the former. Central limit theorem. The UAN condition for double arrays of random variables. The Liapounov and Lindeberg-Feller theorems. *Indication* of further developments, and of rates of convergence results (in particular, the Berry-Esseen theorem). The law of the iterated logarithm. Conditional expectation.
Professor Taylor

METEOROLOGY (195)

Professors – W.F. HITSCHFELD; SVENN ORVIG; R.R. ROGERS *(Chairman)*
Associate Professors – J.F. DEROME; H.G. LEIGHTON
Assistant Professors – T. WARN; M.K. YAU
Emeritus Professor – J.S. MARSHALL

Room 722, Burnside Hall,
805 Sherbrooke St. West,
Montreal, PQ, Canada
H3A 2k6
Telephone: 392-4461.

Meteorology is the study of the earth's atmosphere from the ground up to the heights where it fades into interplanetary space. Most of this atmosphere (80 per cent by mass) is within about 12 kilometers of the surface, and it is here that much of the familiar "weather" occurs; above this height lies the stratosphere, where there still are winds and pressure-patterns, but clouds and up-and-down currents of air are scarce. The atmosphere can be studied as a large ocean of gas by the methods of fluid dynamics; winds, temperature fronts, and planetary waves are the ideas involved in such a program. Or it can be studied from the point of view of its detailed physics: how cloud droplets make rain, or how sunlight warms the ground, and the ground warms the air above it by radiation and convection.

Meteorology is not weather-forecasting, though forecasting is one of the objectives of meteorology. The point of view is always quantitative; meteorology is physics, and like other parts of physics it attempts to devise theoretical models of its complex subject, of the motion and composition of the air, and of its interaction with radiation and the solid or liquid surface.

There are two main programs in Meteorology, Honours and Major. Designed primarily for students who intend to pursue graduate study in Meteorology, the Honours program is rigorous and specialized, emphasizing mathematics and physics. It is similar to Honours Physics until the final year, during which there is more concentrationon courses in Meteorology. The Major program, although somewhat less specialized, is still recognized as adequate for a career in Meteorology. A high standing in the Major program is sufficient for admission to graduate study, although in some cases a qualifying year may be required.

In addition to the Honours and Major programs, two Faculty Programs are administered by Meteorology.

A degree in Meteorology can lead to a professional career in government service or private industry. Certain provincial governments and environmentally-oriented consulting firms employ graduates in Meteorology, as well as the meteorological services of Canada and of Québec. Positions in teaching and research are available to graduates with M.Sc. and Ph.D. degrees.

FACULTY PROGRAMS

For details, see Faculty Programs, beginning of Science section.

MAJOR IN METEOROLOGY

Consult Professor Warn, Burnside Hall, Room 713.

The Major program includes 52 credits of required courses: Meteorology 195-210A, -211B, -320A, -321B, -410A, -411B, -510A, -511B; Mathematics 189-222A,B, -223A, -314A,B, -315A,B; Physics 198-241A,B, -242A,B, -251A,B, -253B, -281A,B, -283B; Computer Science 308-200A,B. In addition, 9 approved credits are specified, of which some must satisfy a requirement in Statistics (either Physics 198-219A or Mathematics 189-323A,B and -324A,B), and the others are ordinarily selected from Mathematics 189-317A,B, -319B; Meteorology195-521B; or Physics 198-309A, -319B, -334B.

HONOURS IN METEOROLOGY

Consult Professor Warn, Burnside Hall, Room 713.

Admission to the Honours program requires high standing in Mathematics and Physics. The first year is essentially the same as Honours Physics. The final year is devoted primarily to 600-level courses in Meteorology. Some flexibility is permitted in the U2 and U3 years to allow a student to concentrate on a particular area of interest, usually either Dynamic Meteorology, Climatology, or Physical Meteorology.

The program includes 51 required credits: Mathematics 189-247A, -248A, -249B, -325B, -356A; Physics 198-241A, -251A, -253B, -259D, -261B, -355A; Computer Science 308-200A,B; Meteorology 195-510A, -653D, -655A, -656D, -664B, -665B. In addition 21 optional credits are to be selected from Meteorology 195-320A, -321B, -410A, -411B, -521B, -651D, -652A, -662B; Mathematics 189-317A, -319B, -356B, -555A; Physics 198-328A, -351A, -363B; Geography 183-324B. For further details consult the Meteorology Department.

DIPLOMA IN METEOROLOGY

Consult the Departmental Secretary, Burnside Hall, Room 722.

The Department offers an intensive, one-year program in theoretical and applied Meteorology to B.Sc. graduates of suitable standing in Physics, Applied Mathematics, Engineering Science, or other appropriate disciplines, leading to a Diploma in Meteorology. The program is designed for students with little or no previous background in Meteorology who wish to direct their experience to atmospheric or environmental applications, or who need to fulfill academic prerequisites in Meteorology to qualify for employment. The program consists of the following courses: Meteorology 195-310A, -321B, -410A, -411B, -510A, -511B, -521B, -653D, -655A, -656D, for a total of 30 credits. An exemption of up to 6 credits may be allowed for courses already taken. Students granted such exemptions are required to add electives from an approved list to maintain a total credit count of approximately 30. For details, consult the Meteorology Department.

Course Descriptions

195-210A INTRODUCTION TO ATMOSPHERIC SCIENCE. (3 credits; 3 hours lectures; Open to all students). Origin and composition of the atmosphere. Meteorological observations and instruments. Thermal structure of the atmosphere. Radiationlaws, solar radiation, ozone balance, atmospheric optical phenomena, terrestrial radiation, heat balance. Gas laws, adiabatic and diabatic processes, instability. Clouds, fog, precipitation, showers, thunderstorms and hail. Weather modification.
Professor Leighton

195-211B WEATHER SYSTEMS AND CLIMATE. (3 credits; 3 hours lectures; Open to all students). Laws of motion, local wind systems, the general circulation. Air masses, fronts, mid-latitude cyclones, tropical disturbances. Climatic elements, climate classification, climate change. Atmosphere of other planets.
Professor Hitschfeld

195-320A INTRODUCTORY ATMOSPHERIC PHYSICS. (3 credits; 3 hours lectures; Prerequisite: Permission of instructor). Classical thermodynamics applied to atmospheric air. Water vapor and its thermodynamic effects. Solar and terrestrial radiation. Heat budget of earth and atmosphere. Diffusion and turbulent transfer of heat and matter in the atmosphere.
Professor Hitschfeld

195-321B CLOUD PHYSICS. (3 credits; 3 hours lectures; Prerequisite: Meteorology 195-320A). Atmospheric stability and convection. Nucleation of water and ice. Growth of cloud droplets and the development of precipitation. Structure of clouds and rain, methods of observation.
Professor Rogers

195-410A DYNAMIC METEOROLOGY I. (3 credits; 3 hours lectures; Prerequisites: Mathematics 314A and 315B; Meteorology 320A, 321B or permission of instructor). Momentum equations in rotating coordinates, geostrophic flow, steady curved flow. The vertical structure of wind and pressure systems. The circulation theorem and vorticity equation. Pressure as the vertical coordinate. Analysis of synoptic scale motions in middle latitudes.
Professor Yau

195-411B DYNAMIC METEOROLOGY II. (3 credits; 3 hours lectures; Prerequisite: Meteorology 410A). Atmospheric oscillations: sound waves, gravity-inertia waves and Rossby waves. Origin of middle-latitude waves: barotropic and baroclinic instability mechanisms. Energy transformations in the atmosphere. Finite difference methods applied to the solution of nonlinear atmospheric models.
Professor Warn

195-510A SYNOPTIC METEOROLOGY I. (3 credits; 2 hours lectures; 2 hours laboratory; Prerequisite: permission of instructor; Corequisite: Meteorology 410A or permission of instructor). Analysis of scalar and vector fields. Kinematics of weather systems. Interpretation of satellite cloud photographs. Diagnostic studies of the development of middle latitude weather systems. Application of the vorticity and thermodynamic equations to studies of circulation systems. (Not open to students who have taken 195-420D or 195-654D).
Professor Derome

195-511B SYNOPTIC METEOROLOGY II. (3 credits; 2 hours lectures; 2 hours laboratory; Prerequisite: Meteorology 410A, 510A; Corequisite: Meteorology 411B or permission of instructor). Analysis of atmospheric fields by computer methods. Analysis of mathematical techniques used in numerical weather prediction and their application to the solution of the potential vorticity and omega equations. The general circulation of the atmosphere. Calculations of fluxes of momentum, sensible, and latent heat by large

scale atmospheric waves. (Not open to students who have taken 195-420D).
Professor Derome

195-521B ATMOSPHERIC TURBULENCE. (3 credits; 3 hours lectures; Prerequisite: Meteorology 195-410A or permission of instructor). Application of statistical and semi-empirical theories of turbulence to the atmosphere. Includes: theories of isotropic turbulence and Kolmogorov's theory, turbulence in stratified media, surface and planetary boundary layers, turbulent diffusion and the dispersal of atmospheric pollutants.
Professor Warn

195-646B* CURRENT WEATHER DISCUSSION. (1 credit; 2 hours; Prerequisite: 195-510A or permission of instructor). Half-hour briefing on atmospheric general circulation and current weather around the world using satellite data, radar observations, conventional weather maps, and analyses and forecasts produced by computer techniques.
Staff

195-651D* PHYSICAL METEOROLOGY. (6 credits; 2 hours). Thermodynamics of the atmosphere. Instability and convection. Cloud physics and storm structure. Radar applications. Solar and terrestrial radiation. Radiation calculations and diagrams. Energy budget of the atmosphere.
Professors Rogers, Leighton and Yau

195-652A* ATMOSPHERIC DYNAMICS. (3 credits; 3 hours). The basic laws of fluid dynamics are applied to large scale atmospheric flows. Mechanics of deformable bodies, Navier-Stokes equations, similarity, vorticity and circulation, exact and approximate solutions, hydrostatic and quasi-geostrophic flows, boundary layers.
Professor Warn

195-653D* CLIMATOLOGY. (6 credits; 2 hours). The general circulation of the atmosphere and the ocean. Climatic classification. The heat and water balance, climatic change.
Professor Orvig

195-655A* TOPICS IN METEOROLOGY. (1 credit; 1 hour). One-hour discussions on special topics in meteorology, e.g. agricultural meteorology, hydrology, atmospheric pollution, atmospheric effects on radio propagation, remote sensing, limits of predictability.
Professor Rogers and Staff

195-656D* DAILY WEATHER DISCUSSION. (2 credits; 2 hours; Prerequisite: 195-646B or permission of instructor). Half-hour briefing on the current weather situation. Students are required to prepare and present discussions on the current weather around the world.
Staff

195-662B* NUMERICAL AND DYNAMICAL METEOROLOGY. (3 credits, 3 hours). Wave solutions to the linearized equations of atmospheric flow: sound, gravity and Rossby waves. Barotropic and baroclinic instabilities. Numerical techniques for solvingthe nonlinear equations: finite difference and Galerkin approximations.
Professor Derome

195-664B* ATMOSPHERIC COMPUTER MODELLING. (3 credits; 4 hours laboratory; Prerequisite: 195-652A; Corequisites: 195-651D and 195-662B). Computer methods for simulating atmospheric processes. Spectral and finite difference methods. Examples from cloud physics, atmospheric dynamics, and climatology.
Professors Derome, Warn, and Yau

195-665B* TOPICS IN METEOROLOGY. (1 credit; 1 hour). Seminars on special topics as in 655A.
Professor Rogers and Staff

195-670A,B* READING COURSE IN METEOROLOGY. (2 credits). Assigned reading of a specialized topic with formal evaluation.
Staff

*Restricted to Graduate students and final-year Honours Meteorology students. Others by special permission.

MICROBIOLOGY AND IMMUNOLOGY (528)

Professors – I.W. DEVOE *(Chairman);* J. GORDON; H.G. ROBSON; W. YAPHE
Associate Professors – Z. ALI-KHAN; M.G. BAINES; E.C.S. CHAN; L. KAPICA; J. MEAKINS; J. MENDELSON; E. MILLS; R.A. MURGITA; G.K. RICHARDS; R. SIBOO; M. WAINBERG
Assistant Professors – N.H. ACHESON; F.S. ARCHIBALD; D. BRIEDIS; J.W. COULTON; A.F. DOSS; M.S. DUBOW; J.A. HASSELL; B.E. HOLBEIN; L. MARTINEZ; J. PORTNOY
Lecturers – M.F.Z. BLANC; B. CLECNER; E. KOLYVAS; D. PORTNOY; R. SAGINUR; T. SALO
Associate Members – N. CHRISTOU; R. LALONDE; C.K. OSTERLAND; A.R. POOLE; H. RODE

Room 511,
Lyman Duff Medical Sciences Building
3775 University Street,
Montreal, P.Q., Canada
H3A 2B4
Telephone: 392-8360

Microbiology is the study of minute forms of life, which are best examined using a light or electron microscope. It is one of the youngest

sciences, despite the fact that the simplest microscope was invented over three hundred years ago, and the existence of microbes was suspected long before that. In its relatively short history, however, microbiology has had tremendous impact in such varied fields as medicine, agriculture, genetics, forestry and industry.

The main groups of microorganisms are the bacteria, protozoa, fungi and viruses, which are now included under the broad term "microbiology." These organisms, although so small as to be measured in thousandths of a millimeter have characteristic structures and life habits. Many of their complex chemical, physical and genetic properties are shared with man and other higher organisms. Because of their rapid growth rate, they are widely used as "experimental animals" in studying cell processes. Microorganisms of all kinds are widespread in man's environment and are important in his everyday life in many ways. Some cause diseases of plants, animals or man; others are useful in breadmaking, brewing, ripening of cheese, winemaking, manufacture of vaccines, antibiotics, and pure chemicals; some are the cause of food spoilage; and still others are of vital importance in maintaining soil fertility or in the control of forest insect pests.

Opportunities for careers in pure or applied microbiology are many and varied. For interested students, the following introductory reading is suggested:

M.J. Pelczar, Jr., and E.C.S. Chan, *Elements of Microbiology* (McGraw-Hill, New York, 1981).

FACULTY PROGRAM

For details, see Faculty Programs, beginning of Science section.

MAJOR PROGRAM

The following courses are required to complete a Major program in Microbiology and Immunology.

U1: Microbiology 528-211A, 528-212A; Biology 177-200A, 177-201B, 177-202B or 177-274A; Chemistry 180-203A or 180-204A,B, 180-222A,B; Physiology 552-211D; Psychology 204-204A,B.

U2: Microbiology 528-314B, 528-313B or 528-315B, 528-323A; 528-324A; Biology 177-301A,B, 177-302A,B; Biochemistry 507-311A, 507-312B.

U3: Microbiology 528-465A, 528-466B, 528-313B or 528-315B; Biology 177-310B.

68 credits: Consult the Department of Microbiology and Immunology for an adviser.

HONOURS PROGRAM

The Honours program is a rigid one and intended for those students planning to enter graduate study after completion of the B.Sc. No student will be admitted to the Honours program until U-2. Students hoping to be admitted to Honours in U2 should follow the U-1 Major program and must obtain a GPA of 3.0 for admission. For continuing in Honours a GPA of 3.1 must be obtained in U-2. For graduation in the Honours program the student must pass all required courses at C level or better and achieve a sessional GPA of at least 3.1 in the U3 year.

The following courses are required in U-2 and U-3 to complete the Honours program:

U2: Microbiology 528-314B, 528-313B or 528-315B, 528-323A; 528-324A; Biology 177-301A,B, 177-302A,B; Biochemistry 507-311A, 507-312B.

U3: Microbiology 528-465A, 528-466B, 528-313B or 528-315B; 528-502D,G; Biology177-310B.

80 credits: Consult the Department of Microbiology and Immunology for an adviser.

ADVISERS

All students (U1, U2, U3) must meet with an adviser prior to registration. For an appointment, telephone 392-8360, Lyman Duff Medical Sciences Building, room 511.

INTERDEPARTMENTAL HONOURS IN IMMUNOLOGY

The Departments of Biochemistry, Microbiology and Immunology and Physiology offer an interdepartmental Honours program in Immunology.

Details of this program may be found under Immunology.

Course Descriptions

• *Denotes not offeres 1982-83.*

528-211A BIOLOGY OF MICROORGANISMS. (3 credits; Corequisite: Biology 177-200A; 3 hours of lecture). A general treatment of microbiology bearing specifically on the biological properties of microorganisms. Emphasis will be on procaryotic cells. (Not open to students who have taken 528-311).
Professor Chan

528-212A LABORATORY IN BIOLOGY OF MICROORGANISMS. (2 credits; Corequisite: Microbiology 528-211A; 1 hour of lecture, 3 hours of laboratory, 1 hour of conference). This laboratory course is designed to complement Biology of Microorganisms 528-211A. Sessions

introduce general techniques peculiar to the handling of microorganisms.
Professor Chan

• **528-313B PARASITOLOGY.** (3 credits; Anatomy 504-261A is recommended). *Given in alternate years.* A study of the biology, bionomics, epidemiology, pathogenicity and diagnosis of the parasites of man. Laboratory will consist of a lecture on techniques, demonstrations and practical work.
Professor Ali-Khan

528-314B IMMUNOLOGY. (3 credits; Prerequisite: Biology 177-200A and 177-201B; 3 hours of lecture). A comprehensive study of the fundamental principles of immunobiology.

528-315B THE PATHOGENIC FUNGI. (3 credits; Prerequisite: Microbiology 528-211A, 528-212A; 2 hours of lecture, 3 hours of laboratory every other week). *Given in alternate years.* A study of the morphological, cultural and physiological characteristics of the pathogenic fungi, their pathogenic activities and the etiology and epidemiology of fungus diseases of importance in human and veterinary medicine.
Professor Kapica

528-323A MICROBIAL PHYSIOLOGY. (3 credits; Prerequisites: Microbiology 528-211A; 3 hours of lecture). A broad introduction to the physiology of microorganisms. The chemical activities of microbes will be studied from a basic knowledge of microbiology and biochemistry. (Not open to students who have taken 528-423).
Professor Yaphe

528-324A FUNDAMENTAL VIROLOGY. (3 credits; Prerequisites: 528-211A; 2 hours of lecture). A study of the fundamental properties of viruses and their interaction with host cells. Emphasis will be on phenomena occurring at the cellular level. (Not open to students who have taken 528-424).
Professor Hassell

528-465A INFECTION AND IMMUNITY I. (4 credits; Prerequisites: Microbiology 528-211A, 528-212A, 528-314B; 3 hours of lecture, 3 hours of laboratory, 1 hour of conference). A survey of primary pathogenic bacteria and the type of infections they cause followed by a detailed study in microbial mechanisms of pathogenicity and host response to infection. (Not open to students who have taken 528-422, 525 or 527).
Professor Holbein

528-466B INFECTION AND IMMUNITY II. (4 credits; Prerequisites: Microbiology 528-211A, 528-212A, 528-314B; 3 hours of lecture, 3 hours of laboratory, 1 hour of conference). A study of the properties and activities of the major groups of mammalian viruses including epidemiology of viral infections, immunoprophylaxis, adverse immune reactions and sero-diagnostic techniques. (Not open to students who have taken 528-422, 525 or 527).
Professor Holbein

528-502D INDEPENDENT STUDIES IN MICROBIOLOGY AND IMMUNOLOGY. (12 credits; 12-15 hours per week research project and related seminars. Restricted to U3 Honours students and selected major students by permission of the Department Chairman). Students will be assigned to a staff member for supervision of the research project. (Not open to students who have taken 528-471, 472 or 501).
Professor Holbein

CENTRE FOR NORTHERN STUDIES AND RESEARCH (197)

Director – J.M. CRAM
Associate Director (Research) – P.F. WILKINSON
Senior Research Associate – A. COOKE

Purvis Hall
1020 Pine Ave. West
Montreal, PQ
Canada H3A 1A2

The Centre initiates, encourages, and co-ordinates McGill-based research and training related to the North. It has close links through its library and information network with the three other Québec northern research centres and represents McGill in the Association of Canadian Universities for Northern Studies.

Facilities are provided for field training and research at its Subarctic Research Station, Schefferville, Québec and at the McGill-Axel Heiberg Research Station in the High Arctic.

The Centre is particularly active in research and training programs related to the Native peoples of northern Québec and the Canadian Eastern Arctic. Undergraduates interested in the North may obtain training to follow careers related to their interest in the region. A number of field fellowships are awarded annually.

Courses

197-490A SEMINAR IN NORTHERN STUDIES I. (3 credits; Prerequisite: permission of the student's adviser and of the Director). Weekly seminars on selected aspects of northern research and development in the natural and social sciences with an emphasis on interdisciplinary topics; supervised reading appropriate to the student's specialization; preparation of a term paper.

197-491B SEMINAR IN NORTHERN STUDIES II. (3 credits; Prerequisite: permission of the student's adviser and of the Director). Weekly seminars on selected aspects of northern research and

development in the natural and social sciences with an emphasis on interdisciplinary topics; supervised reading appropriate to the student's specialization; preparation of a term paper.

PARASITOLOGY (391)

Professors – EUGENE MEEROVITCH *(Director);* CHARLES E. TANNER
Associate Professors – G.M. FAUBERT; MANFRED E. RAU
Assistant Professor – MARK A. CURTIS
Auxiliary Professors (part-time) – ROY M. ANDERSON; PIERRE VIENS
Information Scientist – THERESA W. GYORKOS *(Part-time)*

The Institute of Parasitology is part of the Faculty of Science. It does not offer undergraduate programs but cooperates with other departments in teaching undergraduate courses on the Macdonald Campus and on the McGill campus as listed below. Its main teaching function is to offer courses and programs leading to the degrees of M.Sc. and Ph.D. Candidates for either degree should possess an honours degree in a biological subject, or in medicine or veterinary science. Previous experience in parasitology is less important than a sound background in quantitative and/or experimental biology.

The Institute is located on the Macdonald Campus, Ste. Anne de Bellevue.

Courses

177-345A PARASITISM AND SYMBIOSIS. (Biology Department, McGill Campus).

349-424A PARASITOLOGY. (Entomology Department, Macdonald Campus).

362-438A IMMUNOLOGY. (Microbiology Department, Macdonald Campus).

PATHOLOGY (546)

546-300B PRINCIPLES OF DISEASE. (3 credits). This course is an introduction to the study of disease. It is concerned with changes in normal structure and function and their causes at the host, tissue and cellular level. It is an upper level biological science course and Biology 177-200A and 177-201B (or 177-201D) or Physiology 552-211D are minimum prerequisites. There are no laboratories.
Professor H. Sheldon

PHARMACOLOGY AND THERAPEUTICS (549)

549-461D GENERAL PHARMACOLOGY. (6 credits; Prerequisites: 552-211D or 311A, 312B, 313B; 177-301A and 302B; 507-311A or equivalent. Restrictions: U3 students with permission of instructors). Selected topics of basic interactions between chemicals and biological systems. Actions of drugs on molecular and cellular level in autonomic and central nervous system. Agents affecting cardiovascular and endocrine systems. Chemotheraphy of infections and of cancer. Anticoagulants. Principles of drug disposition (pharmacokinetics).
Professors B. Esplin and J.M. Trifaro

NOTE: There may be changes to the Pharmacology course offerings; please check with the department.

PHYSICS (198)

Emeritus Professor – J.S. MARSHALL
Professors – R.E. BELL; M. COHEN *(Faculty of Medicine);* A.P. CONTOGOURIS *(on leave);* S. DAS GUPTA; F.T. HEDGCOCK; W.F. HITSCHFELD; J.E. KITCHING; C.S. LAM; M.P. LANGLEBEN; J.K. PLEE *(on leave);* B. MARGOLIS; S.K. MARK; W.M. MARTIN *(Assistant Chairman);* R.B. MOORE; P.M. PATEL; E.R. POUNDER; J.M. ROBSON; D.G. RYAN; R.T. SHARP; D.G. STAIRS; E.J. STANSBURY; R. STEVENSON; N de TAKACSY *(on leave);* P.R. WALLACE; D. WALSH *(on leave);* M.J. ZUCKERMANN
Associate Professors – G.L. AUSTIN; J.E. CRAWFORD; R. HARRIS; R. HENZI; T.F. MORRIS; W.B. MUIR; J.O. STROM-OLSEN; J.M. TRISCHUK
Honorary Lecturer – P.C. LANDRY *(Faculty of Education)*
Curator, Rutherford Museum – F.R. TERROUX
University Research Fellow – B.J. JENNINGS

Rutherford Physics Building, Room 108
3600 University Street,
Montreal, PQ Canada
H3A 2T8,
Telephone 392-5130

Physics is in many ways the parent of the other natural sciences and its discoveries and laws continually affect their development. Its range and scope extend in space and time from subnuclear particles to the universe itself. The subfields of physics such as mechanics, thermodynamics, electricity, atomic physics and quantum mechanics, to mention but a few, permeate all other scientific disciplines. People trained in physics are employed in industry, government, and educational systems where they find many challenges as teachers, researchers, administrators and in the rapidly developing area of scientific business.

In addition to the Faculty programs to two main undergraduate programs in Physics at McGill are: the Major and the Honours. The Major program offers a broad training in classical and modern physics and yet leaves room for the student to take a meaningful sequence of courses in two other areas. Flexibility and accessibility are

two features of the Major program: to enable the student to take advantage of this, the Department has prepared a number of options consisting of the Major core and sequences from other disciplines. An example would be an option in Meteorology. Those interested should ask their Advisers. The Honours program is more highly specialized and the courses are more demanding. High standing in collegial mathematics and physics is a requirement for admission. The Honours program is appropriate for students who wish to make an in-depth study of the subject in preparation for graduate work and an academic or professional career.

The list of pre-and corequisities is not absolute. In many cases permission of the department may be sought to have a specific prerequisite waived. The procedure is to ask the professor in charge of the course to review your case for such a waiver. The objectives of the 100-level courses are described in the following section entitled *Science Freshman Program.*

Courses 198-200D, -204A,B, -224A and -247A are designed for students from Faculties other than Science (such as Arts and Music) and have no prerequisites as such, although a reasonable knowledge of high-school level algebra, geometry and trigonometry is desirable.

The block of numbers 198-205A,B: 198-206A,B: 198-208A,B; and 198-209A,B has been reserved for a series of new courses "Introduction to Selected Topics in Physics". These courses, of one credit each, will introduce topics in physics which are of current interest. Topics given under numbers -205 or -206 will have CEGEP Physics* as prerequisite; those given under numbers -208 or -209 will have no Physics prerequisite. The topics will vary from year to year. The titles to be offered in the 1981-1982 session will be found under course numbers 198-205A, 298-208A, and 198-209A. For further information, enquire at the Department of Physics.

All other 200-level courses are designed primarily for science students and assume successful completion of CEGEP level physics* and mathematical programs. The phrase "Prerequisite CEGEP Physics*" has been inserted to make this point clear. If the student has not included Calculus III in his CEGEP program, then he should register in the first term of the U1 year for Mathematics 189-222.

**Physics 203-101, 203-201, 203-301-78 or equivalent - CEGEP course numbers, standard throughout the Province of Québec.*

SCIENCE FRESHMAN PROGRAM

Students entering McGill with a Québec CEGEP profile in Science will normally begin their programs in Physics with courses at the 200 level. However, those without this profile will normally take either courses 198-101 and 198-102 or 198-102 if they intend to proceed in the Biological Sciences, or courses 198-111, 198-112, and 198-113 if they intend to proceed in Physical Sciences or Engineering. It is assumed that all candidates have a reasonable fluency in algebra, geometry and trigonometry at the high school level. If this is not the case, then 189-112 should be taken concurrently with 198-101. Those for whom this is not necessary are advised to take 189-120 concurrently with 198-101.

Course 198-110 is intended for those students who, having taken 198-101 and 102 or the equivalent elsewhere, wish to proceed in Physical Sciences or Engineering. Thus the sequence 198-101, 198-102, 198-110 is equivalent to 198-111, 198-112, and 198-113.

HONOURS PROGRAM

Students entering the Honours program for the first time should have high standing in Mathematics and Physics and should register for all the courses listed below for the U1 year.

In addition to a sufficient number of elective credits, the Department prescribes a total of 78 credits distributed over the three years as follows:

U1: Mathematics 189-247A, -248A, -249B, -325B; Physics 198-241A, -251A, -253B, -259D, -261B. 27 credits.

U2: Physics 198-328A, -350A, 351A, 352B, -355A, -357D, -359A,B, -362B, 27 credits.

U3: Physics 198-459D, -551A, -562A and four of Physics 198-363B, -434B, -514B, -557A, -558A, -559B, -567B, -572B; Mathematics 189-360A; Geological Sciences 186-502A or other 3-credit course approved by the Department. 24 credits.

NOTE: Mathematics 189-360A and Physics 198-363B are recommended options for Honours students in either the U2 or U3 year. These courses are normally offered in alternate years. (Students already in the program should note that course 198-363B is required in their U2 year, and that 198-328A is not required).

A student whose average in the required courses in any year falls below GPA 2.8, or whose mark in any individual required course falls below 55% may not register in the Honours program the following year except with the permission of the Department.

Exceptional students may apply for an *ad hominem* Joint Honours program in Mathematics and Physics.

MAJOR PROGRAM

For the Major program, the Department's requirements, in addition to a sufficient number of elective credits, are:

A) A core of 48 credits as follows: Mathematics 189-247A, -248A, -325B; Physics 198-241A,B, -242,B, -251A, -253B, -259D, -328A, -331B, -342B, -346D, -359A,B, and two of -434B, -437B, -438A.

B) 12 credits chosen from the following list: Geological Sciences 186-502A; Mathematics 189-249B (or -316B), -317A, -319B; Physics 198-214A, -219A, -224A, -225B, -248B, -261B, -309A, -314A, -319B, -334B, -337B, -362B, -413A, -434B, -437B, -438A, -449B; Computer Science 308-200A,B; one approved course 3 credits, not listed above.

Students in the U1 year wishing to proceed into the U2 Honours Program should take in their U1 year all of the -200 level courses in 'A' above, with the exception of 198-242A,B, and also take 189-249B, 189-325B, and 198-261B. This will give them a U1 program identical to that specified for the Honours Program.

For students enrolled in the Major Program prior to 1981-82, Physics 198-331B is optional, but not compulsory.

MAJOR IN PHYSIOLOGY AND PHYSICS

See Department of Physiology.

FACULTY PROGRAMS

For details, see Faculty Programs, beginning of Science section.

MINOR PROGRAM IN ELECTRICAL ENGINEERING

In addition to the requirements for Major in Physics, 24 credits as follows:

1. for the option 'Systems, Communication and Control'.
   Core (12 credits): 304-201A,B; -302A,B; -303A,B; -305B
   Electives (12 credits) to be selected from an extensive list.
2. for the option 'Circuits and Electronic Devices'. Core (12 credits): 304-201A,B; -302A,B; -303A,B; -333A,B.
   Electives (12 credits) to be selected from an extensive list.

This program does not carry professional recognition.

Course Descriptions

• *Denotes course not offered 1982-83.*

NOTE: In general, Honours courses are indicated when the fifth character of the six digit course number is 5 or higher.

198-101A,B GENERAL PHYSICS FOR BIOLOGICAL SCIENCES AND PRE-MEDICAL STUDENTS. (4 credits; 3 hours lectures; 2 hours laboratory). The object of this course is to give the students a basic understanding of the principles of physics, illustrating these, where possible, with current examples of their use in biology and medicine.

198-102A,B ELECTROMAGNETISM FOR BIOLOGICAL SCIENCES AND PRE-MEDICAL STUDENTS. (4 credits; 3 hours lectures; 2 hours laboratory; Prerequisite: 198-101; Corequisite: 189-120). Electric field and potential. D.C. circuits and measurements. Capacitance. Magnetic field and induction. Semiconductor devices and their application. Feedback and control systems. Electromagnetic waves.

These courses, 101A,B and 102A,B together satisfy:

a) physics requirements for Medical School;
b) minimum B.Sc. requirements for post-matriculation physics.

198-110A,B MECHANICS AND ELECTROMAGNETISM. (3 credits; 3 hours lectures; Prerequisites: 189-121, 198-101 and 198-102). This course is intended for those students who having taken 198-101 and -102 or the equivalent elsewhere, wish to proceed into Physical Sciences or Engineering at McGill. It includes the elements of mechanics, waves, electromagnetism and optics treated with the use of calculus.

198-111A,B MECHANICS. (3 credits; 3 hours lectures, 3 hours laboratory in alternate weeks; Corequisite: 189-120). The basic laws and principles of mechanics. (Not open to students who have taken 198-121).

198-112A,B, ELECTRICITY AND MAGNETISM. (3 credits; 3 hours lectures, 3 hours laboratory in alternate weeks; Prerequisite: 198-111, Corequisite: 189-121). The basic laws of electricity and magnetism. (Not open to students who have taken 198-122).

198-113A,B WAVES AND OPTICS. (3 credits; 3 hours lectures, 3 hours laboratory in alternate weeks; Corequisites: 189-121 and 198-112; Prerequisite: 198-111. Wave phenomena and optics. (Not open to students who have taken 198-120).

198-200A, 198-201B IDEAS AND CONCEPTS OF MODERN PHYSICS I AND II (each 3 credits, 3 hours lectures: Science students must have permission of their adviser. See "Science Courses for Arts Students in the Arts section). (Not open to students who have taken 198-200D).

198-204A,B PLANETS, STARS AND GALAXIES. (3 credits; 3 hours lectures; 3 evening periods for star identification and use of telescopes). An elementary astronomy course for non-science students (see "Science Courses for Arts

Students" in the Arts section) and for science students not taking a Physics program. (Not open to students who have taken 198-214A).

198-205A INTRODUCTION TO SELECTED TOPICS IN PHYSICS. (1 credit; 2 hours lectures, first six weeks; Prerequisite: CEGEP physics). *Topic for 1982-83;* The Modern Optical Microscope.

- **198-206A,B INTRODUCTION TO SELECTED TOPICS IN PHYSICS.** (1 credit; 2 hours lectures, first six weeks; Prerequisite: CEGEP physics).

198-208A INTRODUCTION TO SELECTED TOPICS IN PHYSICS. (1 credit; 2 hours lectures, first six weeks; Not open to students in Physics programs). *Topic for 1982-83;* The Safe Use of Nuclear Radiation.

198-209A INTRODUCTION TO SELECTED TOPICS IN PHYSICS. (1 credit; 2 hours lectures; first six weeks; Not open to students in Physics programs). *Topic for 1982-83;* The Laser and Its Uses.

198-214A ASTROPHYSICS. (3 credits; Prerequisite: CEGEP Physics). An introduction to astronomy and astrophysics with emphasis placed on methods of observations. Astronomy of time and position; solar system; stars; stellar structure and evolution, galaxies including pulsars, quasars and black holes. (Not open to students who have taken or are taking 198-204A,B).

198-217B PHYSICS AND THE LIFE SCIENCES. (3 credits, 3 hours lectures; Prerequisites: CEGEP Physics or permission of instructor). The examination of biological material using radiation including optical and electron microscopy. X-ray and neutron crystallography, radiation measurements in biological matter.

198-219A STATISTICAL TREATMENT OF EXPERIMENTAL DATA. (3 credits; 3 hours lectures; Prerequisite: CEGEP physics). Errors in physical measurement. Probability distributions. Fitting of experimental data. Design of experiments.

198-224A PHYSICS AND PSYCHOPHYSICS OF MUSIC (3 credits; 3 hours lectures). An introduction to physics and psychophysics of music with demonstrations of the relevant phenomena and a predominantly qualitative treatment of the theories explaining these phenomena. The course is designed for students in the Faculty of Music but is suitable also for students with an interest in music, and how it is perceived. Pitch, loudness and timbre in the context of the physics properties of the human ear. The basic physics of music production including modes of oscillation of mechanical systems, resonance, feedback, transmission and reflection of sound. The human voice. Modern methods of sound production using electrical analogue devices and digital computers. An introduction to room reverberation and acoustics.

198-225B MUSICAL ACOUSTICS (3 credits; 3 hours lectures; Prerequisites: CEGEP physics or both 189-112 and 198-224A). A course in physical acoustics with particular applications to music, designed for students in music who have interests in sound recording and reproduction and also suitable for students in science with an interest in music. Resonators and radiators, acoustic impedance. Acoustic properties of strings, bars, membranes, pipes and horns. Application to selected musical instruments. Direction characteristics of sound sources. Room acoustics.

- **198-231A,B MECHANICS.** (4 credits; 3 hours lectures, laboratory alternate weeks, *Test.* Skinner, *Mechanics).* Kinematics. Newton's Laws. Conservation Laws and Symmetry Principles, Two-body Problems. Motion of a Rigid Body. Oscillating Systems. Lagrange's Equations. (Not open to students who have taken or are taking 198-251 or 198-281).

- **198-233A THERMAL PHYSICS** (4 credits; 3 hours lectures, lab alternate weeks). Temperature, heat, work; first law; kinetic theory. Heat engines, refrigerators; secondlaw, entropy. Third law. Conditions for equilibrium. (Not open to students who have taken or are taking 198-253 or 198-283).

- **198-235B MATHEMATICAL PHYSICS.** (3 credits; 3 hours lecture; Prerequisite: Mathematics 189-223A; Corequisite: Mathematics 189-315B). Harmonic motion of simple and continuous systems with examples from mechanics and from electrical circuits; the motion of "imperfect" or perturbed systems; linear response; the discussion of heat flow, fluid flow, and electrical conductivity in two dimensional systems.

198-241A,B SIGNAL PROCESSING. (3 credits; 2 hours lectures; 3 hours laboratory; Prerequisite: CEGEP physics). Linear circuit elements, resonance, network theorems, diodes, transistors, amplifiers, feedback, integrated circuits. (Not open to students who have taken198-232).

198-242A,B ELECTRICITY AND MAGNETISM. (2 credits; 2 hours lectures; Prerequisites CEGEP Physics, 189-222A,B. Incoming students are recommended not to take this course in their first semester). Electric and magnetic fields, Topics in electricity and magnetism Dielectric and magnetic properties of materials. (Not open to students who have taken 198-232).

198-247A PHYSICS OF SPORT (3 credits, 3 hours lectures, 3 afternoons laboratory per term; Prerequisites: 434-205 and 434-206 or 198-121 or 198-101 or equivalent). The application of the principles of physics to sporting activities. Some laboratory measurements will be conducted in collaboration with the staff of the department of physical education.

198-248B PHYSICS OF ENERGY. (3 credits; 3 hours lectures; Prerequisite: CEGEP physics). Various forms of energy: mechanical, electrical, chemical, thermal, nuclear; energy storage, conversion and transportation; energy sources on earth, fossil fuels, renewable resources, energy conservation and the environment.

198-251A CLASSICAL MECHANICS I. (3 credits; 3 hours lectures; Prerequisite: CEGEP physics; Corequisite: 189-222A,B). Kinematics, Newton's laws, conservation laws, dissipative forces. Properties of matter. Harmonic oscillators, central conservative forces, orbits. Accelerated frames of reference. (Not open to students who have takenor are taking 198-231).

198-253B THERMAL PHYSICS. (3 credits; 3 hours lectures; Preequisite: CEGEP physics; Corequisite: 189-222A,B). Energy, work, heat; first law. Temperature, entropy; second law. Absolute zero; third law. Equilibrium, equations of state, gases, liquids, solids, magnets; phase transitions. (Not open to students who have taken 198-233).

198-259D LABORATORY. (3 credits; Prerequisite: CEGEP physics). Laboratory work in mechanics, heat, optics; a project.

198-261B CLASSICAL MECHANICS II. (3 credits; 3 hours lectures; Prerequisite: 198-251). Special relativity, many body systems, fluid mechanics, rigid body rotation, Lagrange's equation, Hamiltonian mechanics.

198-280D LABORATORY. (1 credit; 3 hours laboratory alternate weeks; Prerequisite: 198-281; Corequisite: 198-283). Laboratory work to supplement material in 198-281 and 198-283. This course together with 198-281 and 198-283 constitutes an exact equivalent of 198-259D.

198-281A MECHANICS LABORATORY. (1 credit; 3 hours laboratory, alternate weeks; Corequisite: 198-251A). Laboratory work in mechanics.

198-283B THERMAL PHYSICS LABORATORY. (1 credit; 3 hours laboratory, alternate weeks; Corequisite: 198-253B). Laboratory work in heat and thermodynamics.

198-309A DESCRIPTIVE PHYSICAL OCEANOGRAPHY. (3 credits; Prerequisites: CEGEP physics and Mathematics 189-121A,B). Properties of sea water. Time and space distribution of ocean properties. Water masses and currents.

• **198-314A ASTROPHYSICS II.** (3 credits; 3 hours lectures; Prerequisite: Physics 198-214A). Topics introduced in 198-214A are treated in more detail and depth. Stellar spectra and classification; Saha ionization formula; introduction to theory of stellar atmospheres; equations of stellar structure and the mass-luminosity relation; nuclear energy generations; the Hertzsprung-Russell diagram.

198-319B DYNAMIC OCEANOGRAPHY. (3 credits; Prerequisites: Physics 198-309A, 198-251A,B). Equations of motion, geostrophy, diffusive processes, boundary layers, wind-driven circulation, thermohaline circulation, gravity waves, Kelvin waves, tides inoceans and estuaries, general field techniques.

198-328A ELECTRONICS. (3 credits; 2 hours lectures; 3 hours laboratory; Prerequisite 198-241A,B). Electronics, integrated circuits, microprocessors.

198-331B TOPICS IN CLASSICAL MECHANICS. (3 credits; 3 hours lectures; Prerequisite: 198-251A,B). (Not available to students having taken 198-261B, 198-351A or 198-363B). Introduction to special relativity. The Lorentz transformation, 4-vectors, relativistic kinematics. Lagrangian formulation of classical mechanics. Holonomic and non-holonomic constraints. The Hamiltonian. Applications to coupled oscillators, continuous systems and waves. Introduction to continuum mechanics.

• **198-334B TOPICS IN APPLIED PHYSICS.** (3 credits; 3 hours lectures; Prerequisites: Physics 198-242A,B, -251A,B). Waves and resonances in physical systems; superposition, interference and diffraction; examples from mechanics, electronics, geophysics. Information theory: band widths, signal to noise ratio; examples from communications. Plane wave transmission. Matter waves in solid earth, oceans and atmosphere; acoustic waves.

• **198-337B NUCLEAR ENERGY AND ITS APPLICATIONS.** (3 credits; 3 hours lectures; Prerequisite CEGEP physics). Concepts of nuclear structure with emphasis towards the understanding of nuclear energy sources. Neutron Physics. Fission. Neutron cycle in a reactor, and criticality. Slowing down and diffusion of neutrons. Elementary reactor theory. Critical size. Shielding. Breeding. Comparison of various nuclear power systems. Uses of radioisotopes.

198-342B THEORY AND APPLICATION OF ELECTROMAGNETISM. (4 credits; 4 hours lectures: Prerequisites: 198-241A,B, -242A,B, 189-248A,B: Corequisites: 189-325B or -315A,B). Detailed treatment of E & M waves and applications. (Majors Program). (Not open to students who have taken 198-432A).

198-346D QUANTUM PHYSICS. (6 credits; 3 hours lectures; Prerequisite: Physics 198-251A,B: Corequisites: Mathematics 189-325B or -315A,B). Experimental origins of quantum mechanics. Basic postulates. Uncertainty principle; measurement. The Schroedinger equation, eigensolutions, the harmonic oscillator, angular momentum, matrix mechanics. Identical particles, the exclusion principles, spin, statistics. The hydrogen atom.

198-350A ELECTROMAGNETISM. (3 credits; 3 hours lectures; Prerequisites: 189-247A, -248A,B, 325B). Fundamental laws of electric and magnetic fields in both integral and differential form. (Honours course). (Not open to students who have taken 198-262B).

198-351A CLASSICAL MECHANICS. (3 credits, 3 hours lectures; Prerequisite: 198-261B). Lagrangian mechanics; Variational methods and Hamiltonian mechanics; transformation theory and the Hamilton-Jacobi equation. Small vibrations treated first in matrix form as an eigenvalue problem. Group theory and symmetry classificationof eigenvectors andeigenvalues. (Honours course).

198-352B ELECTROMAGNETIC WAVES. (3 credits; 3 hours lectures: Prerequisite: 198-350A). Vector andscalar potentials; plane waves in homogeneous media; refraction and reflection; guided waves; radiation from simple systems; dipole and qradrupole radiation; introduction to fields of moving charges; synchrotron radiation; Bremsstrahlung (Honours course).

198-355A MATHEMATICAL PHYSICS. (3 credits; 3 hours). Application of mathematical methods in physics. Green's functions; differential equations of mathematical physics; eigenvalue problems. (Honours course).

198-357D QUANTUM PHYSICS. (6 credits; 3 hours lectures). Experimental basis for quantum mechanics; de Broglie wave-length; wave packets; uncertainty principle; Schrodinger equation; tunneling; angular momentum, spin, coupling of angular momenta; matrix mechanics; hydrogen atom; variational principle for helium atom; atomic structure; time-independent perturbation theory. (Honours course).

198-359A,B LABORATORY II. (3 credits; 6 hours; Prerequisite: 198-328A; Corequisite: 198-346D or equivalent). A laboratory in general physics.

198-362B STATISTICAL MECHANICS. (3 credits; 3 hours lectures: Prerequisites: 189-248A,B or equivalents, 198-253B). Quantum states and ensemble averages. Fermi-Dirac, Bose-Einstein and Boltzmann distribution functions and their applications. (Honours course).

198-363B CONTINUUM MECHANICS. (3 credits; 3 hours lectures). Vectors and cartesian tensors. Stress and strain tensors. Constitutive equation for fluids. Fluid dynamics. The Navier-Stokes equation. Elasticity, elastic waves. (Honours course).

198-413A TOPICS IN THE PHYSICAL BASIS OF PHYSIOLOGY. (3 credits; 3 hours lectures: Prerequisite: 189-315A,B, or 189-325B, and permission of the instructor). Analytic and computer simulation techniques are used to examine the role of nonlinearities and time delays in determining the dynamic behaviour of physiological control systems and their relation to normal and pathophysiological states. Examples may be drawn from the control of respiration, cellular proliferation and differentiation, biochemical feedback networks, thermoregulatory mechanisms, and neural feedback. (This course is intended for Major or Honours students in Physics, Physiology, Physiology and Physics, or Mathematics and others with permission). Offered in alternate years.

198-434B MODERN OPTICS. (3 credits; 3 hours lectures; Prerequisite: 198-346D; Corequisite: 198-342B). Reflection and refraction for absorbing and non-absorbing media. Coherence and interference; theory of multilayer films. Fraunhofer and Fresnel diffraction; resolution of Fabry-Perot interferometer and diffraction grating. Applications to holography. Propagation in crystals. Energy levels of many electron atoms; electron photon interaction, optical spectra of atoms. Laser theory – gas and solid state lasers. Light scattering.

198-437B NUCLEAR AND PARTICLE PHYSICS. (3 credits; 3 hours lectures; Prerequisite: Physics 198-346D or permission of Instructor). Simple properties of nuclei and particles. Radioactivity and its applications. Particle interactions with application to astrophysics. Experimental high-energy physics. Accelerators and typical experiments. Quarks.

198-438A SOLID STATE PHYSICS. (3 credits; 3 hours lectures; Prerequisite: Physics 198-346D; Corequisite 198-362B or permission of the instructor). Structure of solids. Thermal vibrations in crystals. Electrons in metals, semi-conductors and insulators. Selected topics from magnetism, semi-conducting devices, superconductivity, etc.

198-449B LABORATORY. (3 credits; 6 hours laboratory; Prerequisite: Physics 198-328, -359A,B). Supervised project work.

198-459D,N PROJECT LABORATORY. (6 credits; 6 hours laboratory). This laboratory will include experiments associated with electromagnetic theory, as well as the optional courses in U3. (Honours course).

- **198-465D MATHEMATICAL PHYSICS FOR CHEMISTS.** (4 credits; 2 hours lectures; Prerequisites: Mathematics 189-314A and 315B). Advanced dynamics, including theory of vibrations. Continuous systems. Eigenfunctions and eigenvalues.

198-514B GENERAL RELATIVITY. (3 credits; 3 hours lectures). Transition from special to general relativity. Non-Euclidian geometry. The basic laws of Physics in co-variant form, Einstein's equations. Newton's theory of gravitation as an approximation. Propagation of gravitation. Rigourous solutions of the field equations. Cosmology.

198-551A QUANTUM THEORY. (3 credits; 3 hours lectures). General formulation, scattering theory, WKBJ approximation, time-dependent perturbation, theory and applications, angular momentum, relativistic wave equations.

198-557A NUCLEAR PHYSICS. (3 credits; 3 hours lectures). General nuclear properties, nucleon-nucleon interaction and scattering theory, radioactivity, nuclear models, nuclear reactions.

198-558A SOLID STATE PHYSICS. (3 credits; 3 hours lectures). Properties of crystals, lattice vibrations and thermal properties of insulators, free electron model and band structure, semiconductors, metals, optical properties.

198-559B ADVANCED STATISTICLA MECHANICS. (3 credits; 3 hours lectures). Maxwell-Boltzmann statistics; perfect classical gas; equipartition of energy; law of corresponding states. Bose-Einstein statistics; phonons and photons; superfluidity. Fermi-Dirac statistics; Pauli paramagnetism; white dwarf-stars. Polymers; one-dimensional Ising model. Boltzmann equation; fluctuations; rate of change of entropy; Fokker-Planck equations; Brownian motion; viscosity.

198-562A ELECTROMAGNETIC THEORY. (3 credits; 3 hours lectures; Prerequisites: U1 or U2 honours physics, or with permission of instructor). Electrostatics, dielectrics, magnetostatics, timevarying fields, relativity, radiating systems, fields of moving charges.

198-567B PARTICLE PHYSICS. (3 credits; 3 hours lectures). Basic interactions and symmetries, kinematics, scattering theory, phase space, symmetry and statistics, boson and baryon spectra, experimental techniques.

198-572B APPLICATIONS OF ELECTROMAGNETIC THEORY. (3 credits; Prerequisite: 198-562A). Scattering processes, wave propagation in various media, wave guides, transmission lines and resonant systems, scalar diffraction theory, plasmas, magnetohydrodynamics.

PHYSIOLOGY (552)

Professors – K. KRNJEVIC *(Chairman);* R.I. BIRKS; H.K. CHANG; T.M.S. CHANG; B.A. COOPER; P. GOLD; M. LEVY; F.C. MacINTOSH; G. MANDL; G. MELVILL JONES; J. MILIC-EMILI; C. POLOSA; K. RUF

Associate Professors – M.W. COHEN; R. DYKES; M.M. FROJMOVIC; L. GLASS; P. KONGSHAVN; W.S. LAPP; M. MACKEY; P. NOBLE; J.S. OUTERBRIDGE; P. PONKA; P. SEKELJ; A. WECHSLER; R.L. WILLIAMS

Assistant Professors – A.S. CHAWLA; J. COMMISSIONG; E. COOPER; R. DOUGLAS; M. GLAVINOVIC; T. HAKIM; J. HENRY; R.E. KEARNEY; N. LAKE; J. MORTOLA; D. ROY; B. SEGAL; A. SHRIER; T. TRIPPENBACH; D. WATT; P. WELDON

Lecturers – E. CHIRITO; C. COLE; G. TOLIS

Associate Members – A. AGUAYO *(Medicine);* C. CHAN *(Physical and Occupational Therapy);* B. DUBROVSKY *(Psychiatry);* R. FAROOKHI *(Obstetrics and Gynocology);* S.O. FREEDMAN *(Medicine);* R. GAGNON *(Medicine);* H. GOLDSMITH *(Medicine);* C. GORESKY *(Medicine);* A. GRASSINO *(Univ. of Montreal, Medicine);* M. KATZ *(Medicine);* G. KOSTOPOULOS *(M.N.I.);* P. MACKLEM *(Medicine);* B. PEARSON MURPHY *(Medicine);* B. POSNER *(Medicine);* L. RENAUD *(Neurology);* S. ROSSIGNOL *(Univ. of Montreal, Physiology);* C. ROUSSOS *(Medicine);* M.R. SAIRAM *(Inst. de Recherches Clin.);* J.F. SEELY *(Medicine);* A. SNIDERMAN *(Medicine).*

Auxiliary Professor – V. KLISSOURAS

Room 1023,
McIntyre Medical Sciences Building,
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Montreal, PQ Canada
H3G 1Y6.
Telephone: 392-4344.

Physiology has its roots in many of the basic sciences including biology, chemistry, mathematics, and physics. Physiology overlaps with other biomedical sciences such as anatomy, biochemistry, pathology and pharmacology, and with psychology and biomedical engineering, and is one of the prime contributors of basic scientific knowledge to the clinical medical sciences.

Members of the Department of Physiology at McGill are engaged in studies dealing with molecules, single cells, or entire systems in a variety of vertebrates, including man. A wide range of interest and expertise is represented, including cardiovascular, respiratory and renal physiology, the physiology of exercise, neurophysiology, endocrinology, immunology, biophysics and biomathematics. Some faculty members have formal or informal links with the departments of mathematics, physics, electrical engineering, chemistry and clinical departments (medicine, surgery, pediatrics, neurology, obstetrics, psychiatry, anesthesia), reflecting and reinforcing the close ties between physiology and other disciplines.

Graduates at the B.Sc. level have found rewarding careers in teaching, in secondary schools and CEGEP's, government service, and laboratory technical assistance, e.g. in pharmaceutical houses, hospitals, and institutions of higher learning. Moreover, physiology provides an excellent background for medicine or dentistry or for other postgraduate work, e.g. in physiology, experimental medicine, phar-

macology, biochemistry and physiological psychology.

The programs offered in physiology differ in their orientation but they all have a common core of material covering cardiovascular, respiratory and renal physiology, neurophysiology, endocrinology and immunology. The specified U1 courses are identifical for all programs except the Joint Major and Joint Honours Program in Immunology and thus afford the student maximal flexibility before deciding on a particular program to follow in U2 and U3.

All new students interested in a Physiology program are asked to attend one of the group information meetings scheduled at **10 a.m. on September 7th, 8th and 9th in Room 1034 in the McIntyre Medical Building.** At these meetings, the features, requirements and scope of the different programs will be explained, and general advice will be offered on the selection of options. At the conclusion, each student will be referred to a departmental adviser for more individualized guidance and the completion of the Study Plan Form required for registration. The student's letter of admission to McGill and the transcript of previous academic work must be presented to the adviser at this time. New students wishing to consult with an adviser during the summer months are asked to contact one of the secretaries in Room 1023 in the McIntyre Medical Building.

Returning students are asked to attend one of the group information meetings for U2/U3 students scheduled at **2 p.m., on September 7th, 8th and 9th in Room 1034 before seeing their adviser.**

FACULTY PROGRAM

For details see Faculty Programs, beginning of Science section.

MAJOR PROGRAM IN PHYSIOLOGY (64-65 credits)

The Major Program includes, in addition to some intensive studies in Physiology, a strong core content of related biomedical and physical sciences. Admission to the Major Program will be in U2, upon completion of the U1 required courses, and in consultation with the student's adviser.

U1: Anatomy 504-261A or 504-214A; Biology 177-200A and 201B (or 201D); Chemistry 180-222A,B, 180-203A or 180-204A,B*; Mathematics 189-231A,B; Physiology 552-211D; Computer Science 308-200A,B (Highly recommended).

U2: Biochemistry 507-311A; Biology 177-301A,B; Phisiology 552-311A, -312B, -313B; one of Mathematics 189-232B, Biology 177-309A, or Biology 177-373B;

U2/U3:9 credits in Upper Level Physiology (400, 500) courses; and an additional 12 credits selected from Biochemistry 507-312B, -456B; Chemistry 180-214B or 180-313A; Pharmacology 549-462A; Physiology 552-423A; Biology177-309A (if not already selected as a Mathematics requirement); Anatomy 504-261A or 504-214A (the alternate to the course selected as the requirement listed for U1), Anatomy 504-321A.

*Recommended for students continuing in physical chemistry.

MAJOR IN PHYSIOLOGY AND PHYSICS (77 credits)

U1: 27 credits: Physiology 552-211D*; Mathematics 189-222A,B -247A, -325B, -248A,B; Physics 198-241A,B, -242A,B, -251A,B, -281A,B.

U2: 29 credits: Physiology 552-311A, -312B, -313B; Mathematics 189-319B; Physics 198-253B, -283B, -328A, -342B, -413A; Computer Science 308-200A,B.

U3: 21 credits: Physiology 552-461D; Physics 198-346D; 3 credits in upper level Physiology courses; 6 upper level credits to be approved by Physiology and Physics.

*The corequisite Biology 177-200A; 177-201B is waived for this program.

HONOURS PROGRAMS IN PHYSIOLOGY

Admission and Continuation:

All admissions to Honours programs will be in U2, and a student must have a U1 GPA of 3.3, with no less than 70% in Physiology 211D. Admission to U3 requires a U2 CGPA of 3.2 with no less than 70% in required U2 Physiology courses. Decisions for admission to U3 will be heavily influenced by student standing in required U2 courses.

The Department reserves the right to restrict the number of entering students in the Honours programs. Students who do not maintain Honours standing may transfer their registration to the Major Program in Physiology.

Application for admission to Honours programs must be made IN WRITING to the Chairman, by July 1st. Students should indicate in their letters the Honours program they would like to enter: Neurophysiology option and/or General Physiologyoption, and include telephone numbers where they can be reached during the last week of August. All candidates will be interviewed during the week preceding registration.

Graduation: To graduate from an Honours Physiology Program the student will have a CGPA of 3.2 with a mark no less than 70% in all required Physiology courses.

Honours Programs in Physiology (74 Credits)

U1: Anatomy 504-214A; Biology 177-200A and 177-201B (or 177-201D); Chemistry 180-222A,B, 180-203A or 180-204A,B, 180-214B; Mathematics 189-231A,B; Physiology 552-211D; Computer Science 308-200A,B (Highly recommended).

U2: 25 credits: Biochemistry 507-311A, -312B; Biology 177-301B, -309A; Physiology 552-311A, -312B, -313B.

Neurophysiology option (in addition to the above): Anatomy 504-321A; Physiology 552-351B.

Physiology option (in addition to the above): Anatomy 504-261A.

U3: 21 credits:
Neurophysiology option: Biochemistry 507-455B or 456B; Physiology552-423A, -451A, -452A, -455D, 461D and 3 credits approved STATISTICS course.

Physiology option: Physiology 552-423A, -459D, 461D and 6 credits in upper level Physiology courses.

INTERDEPARTMENTAL HONOURS IN IMMUNOLOGY.

The Departments of Biochemistry, Microbiology and Immunology, and Physiology offer an interdepartmental Honours program in Immunology. Physiology students interested in the program should contact Dr. W.S. Lapp or Dr. P.A.L. Kongshavn. Details of this program may be found under Immunology.

Course Descriptions

• *Denotes course not offered in 1982-83.*

552-201A PHYSIOLOGY OF MAN: CONTROL SYSTEMS. (3 credits; 3 hours lecture with a demonstration or laboratory on alternate weeks; Prerequisites: Collegial courses in Biology or Anatomy, and in Chemistry and Physics, with Organic Chemistry (180-212 or equivalent) as a pre- or co-requisite). Physiology of body fluids, blood endocrinology (emphasis on reproduction), nerve and muscle, peripheral nerves, central nervous system, autonomic nervous system, defense mechanisms. (For students in the School of Physical and Occupational Therapy, the School of Nursing, and other students with permission of the department).
Professor Commissiong and Staff

552-202B PHYSIOLOGY OF MAN: BODY FUNCTIONS. (3 credits; 3 hours lecture with a demonstration or laboratory on alternate weeks; Prerequisites: Collegial courses in Biology or Anatomy and in Chemistry and Physics, with Organic Chemistry (180-212 or equivalent) as a pre- or co-requisite). Physiology of the cardiovascular, respiratory, excretory and digestive systems; organic and energy metabolism; nutrition; exercise and environmental stress; special senses. (For students in the School of Physical and Occupational Therapy, the School of Nursing, The Faculty of Education, and other students with permission of the department). (Not open to students who took 552-201A in 1976-77 or earlier).
Professor Commissiong and Staff

Physiology 552-201A and 202B are companion courses and it is recommended that they be taken in that sequence, but they may be taken in separate years or in the reverse sequence.

552-211D MAMMALIAN PHYSIOLOGY WITH EMPHASIS ON THE PHYSIOLOGY OF MAN. (6 credits; 3 hours lectures, with 3 hours laboratory every second week in both terms; Prerequisites: As for Physiology 552-201A and 202B; Biology 177-200A, 177-201B if not already taken must be taken concurrently). For students in the Faculty of Science, and for other students with permission of the Department.
Professor Weldon and Staff

552-311A INTERMEDIATE PHYSIOLOGY: NEUROPHYSIOLOGY AND ENDOCRINOLOGY. (3 credits; 3 hours of lectures per week and 3 hours laboratory/demonstration/tutorial semi-monthly; Prerequisite: Physiology 552-211D or permissionof the instructor). Excitable cells: passive and active properties; the central nervous system; endocrine and reproduction. (Not open to students who have taken 552-311D).
Professor Frojmovic and Staff

552-312B INTERMEDIATE PHYSIOLOGY: IMMUNE, RENAL AND RESPIRATORY SYSTEMS. (3 credits; 3 hours of lectures per week and 3 hours laboratory/demonstration/tutorial semi-monthly; Prerequisite: Physiology 552-211D, 311A or permission of the instructor). Topics in immunology, kidney function and respiration explored beyond the introductory level. (Not open to students who have taken 552-311D).
Professor Frojmovic and Staff

552-313B INTERMEDIATE PHYSIOLOGY: CARDIOVASCULAR, BLOOD AND CELL DYNAMICS. (3 credits; 3 hours of lectures per week and 3 hours laboratory/demonstration/tutorial semi-monthly; Prerequisite: Physiology 552-211D, 311A or permission of the instructor). The physiology of the cardiovascular system; blood physiology including hemostasis and thrombosis; transport of fluids and cells; and general cell kinetics and regulation. (Not open to students who have taken 552-311D).
Professor Frojmovic and Staff

552-351B EXPERIMENTAL NEUROPHYSIOLOGY. (3 credits; 2 hours lecture, 3 hours laboratory; Prerequisite: Physiology 552-211D). Enrolment mainly restricted to Physiology Honours students (Neuro option). The course is aimed at providing

the student with an understanding of modern experimental techniques in neuroscience.
Professor Lake and Staff

552-419D PROJECT AND SEMINAR IN IMMUNOLOGY. (6 credits; 7 hours lab, 2 hours seminar weekly; Enrolment restricted to U3 Honours Immunology students). Individual research projects in Immunology under the guidance of staff members in the three participating departments: Physiology, Biochemistry, and Microbiology and Immunology. The students will meet to discuss their research projects in a seminar format during the winter term. They will be evaluated on their laboratory and seminar performance.
Professors Kongshavn and Lapp

552-423A DYNAMICS, FUNCTION AND CONTROL OF PHYSIOLOGICAL SYSTEMS. (3 credits; Prerequisite: Physiology 552-211D, and Biology 177-309 *or* Mathematics 189-315 *or* permission of the instructor). This course examines the control of physiological system function from a theoretical standpoint. The basic roles of mass and momentum transport, pacemaker activity and wave propagation, and neural information processing are emphasized. These are related to the concepts of feedback, stability, and oscillation in normal and patho-physiological states.
Professors Mackey and Glass

552-451A ADVANCED NEUROPHYSIOLOGY. (3 credits; 3 hours lecture and student presentation; Prerequisite: Physiology 552-311A or 552-311Dor equivalent, and permission of the Department). This course examines topics of current interest in neurophysiology including the development of neurons and synapses, presynaptic and postsynaptic events in synaptic transmission, neuronal interactions in CNS function and neuropeptides. Student presentations will be required on each topic. (Not open to students who have taken 552-453A).
Professors M.W. Cohen and E. Cooper

552-452A ADVANCED NEUROPHYSIOLOGY LABORATORY. (3 credits; 8 hour weekly lab and supplementary lectures. Enrolment restricted to U3 Honours Physiology students in Neuro Option). An investigation of neuromuscular transmission using intracellular electrical recording. The experiments will include an examination of the spontaneous quantal discharge of acetylcholine, the action of acetylcholine, the quantal composition of the endplate potential, and the dependence of synaptic efficacy on previous activity. (Not open to students who have taken 552-453A).
Professors M.W. Cohen and E. Cooper

552-454A NEUROSCIENCE RESEARCH SEMINAR (3 credits; 2 hours seminar; Prerequisite: Permission of the Department). Selected topics on the mechanisms of synaptic transmission will be covered with the participation of staff and invited speakers. The first term only of 455D. Students will be required to give a verbal presentation and to write an essay on a topic covered in the seminars.
Professors Krnjevic and Henry

552-455D NEUROSCIENCE RESEARCH SEMINAR. (6 credits; 2 hours seminar; Prerequisite: Permission of the Department). Selected topics in the neurosciences will be covered with the participatio nof staff, invited speakers, and students. The first term will concentrate on mechanisms of synaptic transmission, and the second term on motor and sensory mechanisms in the central nervous system. Students will be required to give a verbal presentation and to write an essay each term on one of the topics covered in that term.
Professors Krnjevic and Watt

552-456B NEUROSCIENCE RESEARCH SEMINAR (3 credits; 2 hours seminar; Prerequisite: Permission of the Department). Selected topics on motor and sensory mechanisms in the central nervous system will be covered with the participation of staff and invited speakers. The second term only of 455D. Students will be required to give a verbal presentation and to write an essay on a topic covered in the Seminars.
Professors Watt and Guitton

552-459D PHYSIOLOGY SEMINAR. (6 credits; 2 hours seminar; Prerequisite: Permission of the Department). Selected topics in mammalian physiology will be covered with the participation of staff, invited speakers, and students. Students will be required to write one essay per term on topics covered in that term. The course is open to Physiology Honours students and to other selected students.
Professor Ruf and Staff

552-461D EXPERIMENTAL PHYSIOLOGY. (6 credits). Individual project work under the supervision of Departmental Staff members. This course is primarily for U3 students in the Honours Physiology programs and the Major program in Physics and Physiology.
Professor Wechsler and Staff

552-502B EXERCISE PHYSIOLOGY. (3 credits; Prerequisite: Physiology 552-311A, 312B, 313B or 552-311D). The course deals with questions related to the behaviour of physiological processes in response to physical effort. In particular it explores such areas as structural basis of muscle contraction, neural control of muscle, mechanics and energetics of muscle contraction, fuel utilization, fatigue, physiological adjustments during exercise and influence of training and heredity.
Professors Polosa and Roussos

552-508A ADVANCED RENAL PHYSIOLOGY. Offered in conjunction with the Department of Experimental Medicine. (3 credits; Physiology 552-312B or 552-311D or the equivalent is a

necessary prerequisite). Lectures and seminars will cover in depth a variety of topics in renal and electrolyte physiology such as ECF volume control; GFR; and tubular transport of electrolytes and divalent cations. Students will be expected to critically discuss selected experimental papers. Admission by permission of the instructor only.
Professors Levy and Seely

552-513B CELLULAR IMMUNOLOGY. (3 credits; 3 hours lectures; Prerequisites: 528-314B, 507-503A, and permission of the instructor). This course deals with cellular interactions, regulation and effector mechanisms of the normal immune response.
Professors Lapp, Kongshavn and Gold

552-515A PHYSIOLOGY OF BLOOD I: HEMOSTASIS AND THROMBOSIS. (3 credits; 2 hours lecture weekly, 1 hour optional seminar biweekly). Offered in conjunction with the Department of Medicine, Division of Experimental Medicine. An intensive study of physiology, chemistry and physical chemistry and biology of hemostasis, thrombosis and blood coagulation, emphasizing molecular and cellular mechanisms of generation and control of blood coagulation, thrombosis and fibrinolysis. Intended for U3 students, graduate students and post MD trainees.
Professors B. Cooper and M. Frojmovic

552-516B PHYSIOLOGY OF BLOOD II. ERYTHROCYTES AND BONE MARROW. (3 credits; 2 hours lecture weekly, 1 hour optional seminar weekly). Offered in conjunction with the Department of Medicine, Division of Experimental Medicine. This course will deal with a series of specific topics including: pathophysiology of megaloblastic anemia, iron deficiency anemia, red cell membranes and metabolism; hemoglobin synthesis; bone marrow stem cell differentiation; red cell destruction, etc. A term paper involving extensive journal reading on a related topic will be required.
Professors M. Katz and P. Ponka

- **552-517A ARTIFICIAL INTERNAL ORGANS.** (3 credits; Prerequisite: Permission of instructors). Physiological, bioengineering, chemical & clinical aspects of artificial organs including basic principles and physiopathology of organ failure. Examples, artificial kidney,liver support systems, oxygenator, cardiac support, vascular substitutes, cardiac pacemaker and others. Artificial limbs not included. Each student shall select one related area of their special interest for a term paper. 517A and 518B when taken together will give a complete picture of this field. However, the student can also select only one of these. This is an interdisciplinary course given jointly with the Artificial Cells and Organs Research Centre and the Division of Experimental Medicine.
Professor T.M.S. Chang and Staff

552-518B ARTIFICIAL CELLS, IMMOBILIZED ENZYMES AND BIOMATERIALS. (3 credits; Prerequisite: Permission of instructors). Physiology, biotechnology, chemistry and biomedical application of artificial cells, immobilized enzymes and proteins, immunosorbent, red blood cell substitute, hemoperfusion, artificial pancreas, biomaterials, blood surface interaction, tissue surface interactions. Each student shall select one related area of their special interest for a term paper. 517A and 518B when taken together, will give a complete picture of this field. However, the student can also select only one of these. This is an interdisciplinary course given jointly with the Artificial Cells and Organs Research Centre and the Divison of Experimental Medicine.
Drs. T.M.S. Chang and Staff

516-502A ADVANCED ENDOCRINIOLOGY See Experimental Medicine, a division of the Departmentof Medicine.

516-503B ADVANCED ENDOCRINOLOGY See Experimental Medicine, a division of the Departmentof Medicine.

516-507D ADVANCED APPLIED RESPIRATORY PHYSIOLOGY See Experimental Medicine, a division of the Department of Medicine.

399-551B FLUID MECHANICAL ASPECTS OF RESPIRATORY PHYSIOLOGY See Biomedical Engineering, a division of the Department of Medicine.

PSYCHOLOGY (204)

Professors – A.S. BREGMAN; VIRGINIA DOUGLAS; W.E. LAMBERT; J. MACNAMARA; R. MELZACK; P.M. MILNER *(Chairman);* R.O. PIHL; E.G. POSER; J.O. RAMSAY; MURIEL STERN

Associate Professors – FRANCES ABOUD; I. BINIK; D. DONDERI; A.A.J. MARLEY; W.E. PIPER; T.R. SHULTZ; D.M. TAYLOR; N. WHITE

Assistant Professors – A.G. BAKER; M. FEUERSTEIN; K.B.J. FRANKLIN; F. GENESEE; M.J. MENDELSON; D.J. OSTRY; M. PETRIDES; M.S. SEIDENBERG; Y. TAKANE; F.E. WILKINSON; D. ZUROFF

Lecturers – PATRICIA JENKINS; R. AMSEL

Honorary and Part-time Appointments – M. BRUCK; I. BRADLEY; J. CONNOLY; D.G. DOEHRING: B. DUBROVSKY; ERIKA GUTBRODT; R. HARRIS; R. KANUNGO; J. MACDOUGALL; BRENDA MILNER; A. SCHLIEPER; Y. STEINERT

Clinical Consultants – S. BENAROYA; W. BRENDER; N. GREENBERG; P. GREGOIRE; A. HEBB; R. KACHANOFF; G. NEMETH; A. PUTTERMAN; M. SPEVACK; A. SURKIS

Room W/8/1, Stewart Biology Building,
1205 Avenue Docteur Penfield,
Montreal, PQ, Canada H3A 1B1.
Telephone: 392-4708

Psychology is the scientific study of mind and behaviour. It is both a social and biological science. As a social science, psychology studies social interactions. As a biological science, it regards humans as the product of evolution and so studies them in biological perspective, comparing and contrasting human behaviour with that of other species.

The data of psychology are collected within the psychological laboratory by the use of experimental methods in the study of behaviour, and outside the laboratory by systematic observation of the behaviour of humans. The aim is to formulate general principles of perception, learning, motivation, and thinking that are relevant to different aspects of individual and social life. Experimentation, laboratory techniques, observational procedures, measurement, and statistical methods are important tools of the psychologist.

Psychology has many interdisciplinary aspects. The study of many psychological problems involves knowledge drawn from other disciplines such as biology, physiology, linguistics, sociology, philosophy, and mathematics. For this reason a student with varied interests can frequently find a place for these interests in psychology.

Psychology is a young science so that explanations of the processes underlying observed phenomena are often theoretical and speculative. The major objectives of psychological study are to reduce the discrepancy between theory and fact and to provide better answers about why man thinks and behaves as he does.

Although a number of undergraduate courses in psychology have applied implications, applied training is in no way the purpose of the undergraduate curriculum. The purpose of that curriculum is to introduce the student to an understanding of the basic core of psychological knowledge, theory, and method, regardless of questions of practical application.

The B.A. or B.Sc. with a Major or Honours degree in psychology is not a professional qualification. It does not qualify the individual to carry on professional work in psychology. In the Province of Québec the minimum requirement for membership in the Corporation of Psychologists of the Province of Québec, the professional association governing the work of psychologists in the Province, is an M.A. or M.Sc. degree, or other equivalent degree. All students planning to practise in the Province of Québec will be examined on their proficiency in French before being admitted to the professional association. Undergraduate courses in psychology may prove of considerable value to students planning careers in professional fields other than psychology, such as medicine, education, social work, communication disorders, or business and industry.

Students who are interested in psychology as a career must pursue graduate studies. Persons who hold graduate degrees in psychology, usually the Ph.D., may find employment in universities, research institutes, hospitals, community agencies, government departments, large corporations, or may act as self employed consultants. At the graduate level, psychology has many specialized branches including social psychology, physiological psychology, experimental psychology, clinical psychology, child psychology, industrial plsychology, community psychology, educational psychology, and others.

Although requirements for admission to graduate studies in psychology vary from one university to another, both the Honours and Major degrees in psychology may qualify the student for admission to many graduate schools, provided, of course, that sufficiently high marks are obtained.

The essential difference between the Honours and the Major program is that higher standards are required of Honours students. Honours students also have an opportunity to work in small groups closely with staff members.

INFORMATION MEETINGS FOR NEW STUDENTS

All new students entering the Psychology undergraduate program are required to attend an Information Meeting prior to registration. Group meetings are scheduled daily at 9 A.M. from August 30 – September 7, in Room W2/3A, Stewart Biological Sciences Building. At these meetings, the Academic adviser will explain the general outline and requirements of the Department's program. Incoming students will have an opportunity to ask questions and receive advice on how to plan their courses. After attending one of these meetings, students will meet individually with an adviser in order to fill out their Study Plan form for registration. No appointment is necessary.

Entering students must bring their letter of acceptance and a copy of their collegial transcript(s). They will also need the Arts and Science Announcement and a Timetable (available in the Student Affairs Office, Dawson Hall). Students will also find the Psychology Department Handbook helpful. This Handbook contains more detailed descriptions of Psychology courses, as well as providing guidelines for how students might pursue particular areas of interest such as Child Development/Developmental Psychology, Clinical/Abnormal Psychology, Cognitive Science and Cognitive Psychology, Comparative Psychology, Human Communication Disorders, Educational Psychology, Psychobiology, Physiological Psychology, Psychology and Philosophy,

Psychology of Language, Organizational Psychology, Psycholinguistics, Quantitative Psychology, and Social/Personality Psychology.

The Psychology Department Handbook can be purchased for $2.50 from about the first of July in Room N7/28, Stewart Biological Sciences Building. Out-of-town residents may have a copy mailed to them upon receipt of $2.50. Requests should be mailed to the Department of Psychology Adviser's Office, 1205 Avenue Docteur Penfield, Montreal, PQ H3A 1B1.

New students may consult the Academic Adviser in Room N7/30 during the summer months. No appointment is necessary.

RETURNING STUDENTS IN PSYCHOLOGY

Returning U2 and U3 students may consult and adviser during the summer months to have their Study Plan form approved. Students who were enrolled in any of the old major options or joint honours programs before the academic years 1980-81 mayrefer to page 129 for descriptions of these old programs. They must bring with them their report of standing, as well as the Arts and Science Announcement and Timetable. No appointment is necessary.

PREREQUISITES:

It is expected that most students who major in Psychology will have taken introductory Psychology and Statistics at the collegial level. In the first year all major students must take Psychological Statistics (204-305A). Those students who have not taken a collegial level statistics course must also take Psychology 204-204A or B in addition to the other courses in their program.

A two-semester course in introductory psychology, such as 204-201D, is a prerequisite for all 300, 400 and 500 level courses in psychology.

MAJOR PROGRAM

NOTE: Students in the Faculty of Science who select arts courses must have a total of at least 54 credits in science courses among the 90 credits for the B.Sc. degree. Students are expected to have whatever prerequisites are described in the Announcement.

Students majoring in psychology must obtain a minimum grade of C in all 54 credits required by their program. A grade lower than C may be made up by taking another equivalent course (if there is one), by successfully repeating the course, or by successfully writing a supplemental examination (if there is one). Students are reminded that at least 54 credits in their program must be in their Faculty.

The statistics requirement introduces approaches to psychological data: Statistics in Experimental Design (204-305A,B) or Correlational Techniques (204-307B). *One* of these two courses must be taken during the U1 of U2 years for a total of *three credits.*

There are five basic psychology courses: Motivation, (204-300A); Learning (204-301B); Perception (204-302A); Thinking (204-303B); and Laboratory Methods (204-312B). Each is a three-credit course. Four of these must be completed by the end of U2 for a total of *twelve credits.*

Seven one-year course sequences introduce specialized areas of psychological knowledge. Any *three* of these *six-credit sequences* must be completed for a total of *eighteen credits.*

Introduction to Abnormal Psychology 204-337A *and* 338B
Cognitive Psychology, 204-401A *and* 404B
Child Development, 204-304D
History and Systems, 204-403A *and* 400B
Physiological Psychology, 204-308D
Personality and Social Psychology 204-330A *and* 333B
Quantitative Psychology, 204-335A *and* 336B

An additional *nine credits* of psychology courses must be completed at the 400 or 500 level.

Twelve credits must be completed at the 300 level or higher. These courses must be selected from the Departments of Psychology, Anatomy, Biology, Biochemistry, Chemistry, Computer Science, Mathematics or Physiology.

Each major student must complete an additional *eighteen credits* of courses outside the Psychology Department, selected from any in the University, subject to regulations of the Faculty of Science. At least *nine credits* must be at the 300 level or higher.

HONOURS PROGRAM

Honours in Psychology prepares students for graduate study, and so emphasizes practice in the research techniques which are used in graduate school and professionally later on. Students are accepted into Honours at the beginning of U2; and the two-year sequence of Honours courses continues through U3. Admission to Honours is selective. There is normally room for 30-35 new Honours students each year. Students with a cumulative grade point average of 2.8 or better are eligible to apply; however, during the past several years it has been possible to accept very few students with averages below 3.5. Once in the Honours program, the student must obtain a GPA of 3.0 in their U2 year in order to continue in the program for U3.

In the U2 year, Honours students will take 204-380D. They are also required to complete three credits from 204-305A/B or 204-307B, plus 12 credits chosen from 204-300A, 204-301B,

204-302A, 204-303B and 204-312B. They will choose *two* of the one year sequences (12 credits). Note that 204-400B is not open to Honours students. In the U3 year, Honours students will take 204-403A, 204-480B and 204-481D in place of the nine credits of psychology courses at the 400 and 500 level required of Major students, and three of the 12 credits required at the 300 level or higher from a selection of other departments. They must complete the same requirements for courses outside the Department of Psychology as are required in the Major Program, according to the Faculty in which they are registered.

Students should note that awarding of the Honours degree will depend on *both* cumulative grade point average and a minimum grade B on the four required courses for Honours students (204-380D, 403A, 480B, 481D). 'First Class Honours' is awarded to students who obtain a minimum cumulative grade point average of 3.5 and a minimum CGPA of 3.5 in the four Honours courses of which 12 out of 18 credits (2 or 3 courses) received at least an A- grade. 'Honours' is awarded to students with a minimum cumulative grade point average of 3.0 and a minimum CGPA of 3.0 on these four courses. Moreover, the awarding of the Honours degree normally requires completion of 2 full years of study U2 and U3, in the Psychology Department; exceptionally good students may be admitted for the U3 year only on the basis of their marks and research experience.

Applications can be obtained from the General Office of the Department of Psychology, Room W8/1, Stewart Biological Sciences Building. The applications must be completed and returned to the General Office by September 1, of the year for which admission to Honours is sought. Candidates will be advised of the Department's decision through a notice posted in front of the Undergraduate Adviser's Office, N7/30, shortly after September 1.

FACULTY PROGRAMS

A Faculty Program in Psychology is a sequence of courses which represents a lesser degree of specialization than a Major or an Honours program. For further details see program information at beginning of the Science section.

GRADUATE STUDY

The adviser to Major students will, whenever possible, assist students in planning their courses to coincide with their professional aims. Most graduate schools require not only a record of high achievement, but also adequate performance on some entrance examinations such as the Graduate Record Examination and the Miller Analogies Tests, as well as letters of recommendation.

Course Descriptions

- *Denotes not offered 1982-83.*

NOTE: Prerequisites: A basic two-semester introductory course in psychology is a prerequisite for all psychology courses with the following exceptions: 204-201D, 204A,B, 203A, 207A, 305A,B, 350B. All 200 and 300 courses are open to students other than Major and Honours students in psychology provided the prerequisites are met and unless otherwise specified. Due to sabbatic leaves and other considerations some courses may not be given in a particular year.

For more detailed information about courses in psychology see *Handbook of Courses and Programs in Psychology* which is on sale in the Departmental Advising Office, N7/28 Stewart Biological Sciences Building.

NOTE: A course is restricted to Honours students when the fifth character of the six digit course number is 7 or higher.

204-201D PSYCHOLOGY: PERSPECTIVES ON HUMAN NATURE. (6 credits; 2 lectures, 1 conference). This course deals with the social and biological basis of motivation, emotion, perception, learning, and thinking, with special emphasis on the nature of man and his relation to society. Human nature is examined from the perspectives of personality, social and abnormal psychology, as well as neuropsychology and animal behaviour.
NOTE: This course or its equivalent is a prerequisite for all Psychology courses with the exception of 204-203A, 207A and 305A,B.
Professor Melzack

- **204-203A EMOTION.** (3 credits; 2 lectures, 1 conference). A review of the available knowledge bearing on the explanation of the behaviour and experience that characterize emotional states, such as anger, elation, anxiety and depression. Implications of current psycho-physiological research on emotion for the problems of health, the arts, and social life will be explored.
Professor Binik

204-204A,B INTRODUCTION TO PSYCHOLOGICAL STATISTICS. (3 credits; 2 lectures, 1 conference). Required of all Majors in Psychology and students intending to enter Honours in Psychology). The statistical analysis of psychological data; frequency distributions; graphic representation; measures of central tendency and variability; elementary sampling theory and tests of significance. *Test.* Ferguson: *Statistical Analysis in Psychology and Education,* 5th edition.
NOTE: This course is a prerequisite for Psychology 204-305A,B, 406B, 310A, 336B.
NOTE: Students who have taken certain equivalent courses elsewhere in the university may not take this course. A list of these

equivalent courses is available in the Department Handbook.
Professor Mendelson

- **204-206B COMPUTER AND MAN.** (3 credits, 2 lectures, 1 conference Prerequisite: Introductory course in psychology). This is an introductory course on the question of whether human intelligence can be analyzed using concepts derived from computers. It considers the basic structure of computers, programming, principles of artificial intelligence and computer-based psychological theories. Comparison is made with Piaget's theory of intelligence.
Professor Bregman

- **204-207A THE PSYCHOLOGY OF KNOWLEDGE AND VALUES.** (3 credits; 3 lectures). Contemporary psychological findings regarding the active, creative nature of human knowledge. Psychological accounts of knowledge of the physical world (space, objects, events), the personal world (states of consciousness, beliefs, values), and the social world (culture and perception interpersonal judgments, conceptions of mental illness) are considered. Possible implications of such psychological findings for individual and social behaviour are examined.
NOTE: This course has no prerequisites: it is designed for students in areas other than psychology. Students in psychology Honours and Major programs may take this course as an elective but may not use credit in this course towards meeting requirements of prescribed programs.
Professor Marley

204-300A MOTIVATION I. (3 credits; 2 lectures, 1 conference). Motivation is considered in terms of the internal and external factors which act to direct behaviour. Basic principles of motivation are developed, based on the behaviour of both animals and humans. Emphasis is on the evolutionary development of behaviour, and therefore the material considered is mainly from animals. *Texts.* Cofer: *Motivation and Emotion:* Bindra and Stewart: (Eds.) *Motivation.*
Professor White

204-301B LEARNING. (3 credits; 2 lectures, 1 conference). A survey of contemporary approaches to research on learning. Topics will include historical background, theories of learning, biological limits, and the application of learning paradigms to practical problems.
Professor Baker

204-302A PERCEPTION I. (3 credits; 2 lectures, 1 conference). Perception is the organization of sensory input into a representation of the environment. Topics discussed will be among the following; coding of colour, depth, size; perception and the moving observer; perceptual development, and perceptual constancies.
Professor Donderi

204-303B THINKING. (3 credits; 2 lectures, 1 conference). An introduction to the study of higher mental processes. Topics such as: developmentof thought and language, problem solving, concept formation, imagery, artificial intelligence.
Professors Bregman and Seidenberg

204-304D CHILD DEVELOPMENT. (6 credits; 2 lectures, 1 conference). A basic introduction to developmental psychology. Various aspects of psychological development in children are considered, including prenatal development and infancy, perceptual and cognitive development, language acquisition, social and personality development and social interaction.
NOTE: This course is a prerequisite for 204-412A. 413B, 414A, 421A and 457A.
Professor Shultz

204-305A,B STATISTICS FOR EXPERIMENTAL DESIGN. (3 credits; 3 lectures; Prerequisite: Psychology 204-204A,B or equivalent). An introduction to the design and analysis of experiments, including analysis of variance, multiple comparisons and nonparametric statistics. *Text:* Ferguson: *Statistical Analysis in Psychology and Education,* 5th ed.
NOTE: Either this course or Psychology 204-307B is required of all students who propose to enter an Honours or Majors program in Psychology. Students who have taken certain equivalent courses elsewhere in the University may not take this course. A list of these equivalent courses is available in the Departmental Handbook.
Professor Ostry/Takane

204-306A COMPARATIVE PSYCHOLOGY. (3 credits; 3 lectures). An introduction to a reductionist evolutionary approach to the study of behaviour and cognition. The lectures will investigate the case for both evolutionary continuities and discontinuities in psychological processes, and their usefulness. Specific topics will include behaviour genetics, evolutionary theory, I.Q., instinct, learning, concept formation, and the evolution of language and communication.
Professor Baker

204-307B CORRELATIONAL TECHNIQUES. (3 credits, 3 lectures; Prerequisite: Psychology 204A,B or its equivalent). The course emphasizes the analysis of relations among a number of variables that are particularly common in social, developmental, clinical and organizational plsychology. In these fields it is common to collect a variety of measures on each of a number of subjects and then to explore the data for meaningful relations using techniques such as multiple regression, factor analysis and discriminant function analysis.
Professor Ramsay

NOTE: Either this course or Psychology 204-305B is required of all students who propose to enter an Honours or Majors program in Psychology.

Students who have taken certain equivalent courses elsewhere in the University may not take this course. A list of these equivalent courses is available in the Departmental Handbook.

204-308D PHYSIOLOGICAL PSYCHOLOGY. (6 credits; 2 lectures, 1 conference; Prerequisite: CEGEP Human Biology 101-921-75, or equivalent). Classical areas of experimental psychology – perception, attention, motivation, and learning – are surveyed from a biological standpoint. The course also includes basic neuroanatomy, neurophysiology and a section on the organization of responses. This course is not recommended for U1 students. *Text.* Milner: *Physiological Psychology.*
Professor Milner

204-310B HUMAN INTELLIGENCE. (3 credits; 2 lectures, 1 conference; Prerequisite: Psychology 204-204A,B or any equivalent course). An introduction to the measurement, structure, development, theory and brain correlates of human intelligence; the role of environment and heredity in its formation; social, cultural, sex, and race differences, will be explored.
Professor Genesee

204-311A HUMAN BEHAVIOUR AND THE BRAIN. (3 credits; 2 lectures, 1 conference). The course is concerned primarily with the behavioural effects of abnormalities of the nervous system. The effects of various types of brain lesions on perception, cognition, language, learning, and emotion are described. For the most part, studies involving human patients, will be considered, but experiments involving brain lesions in monkeys and other primates will also be introduced.
Professor Petrides

204-312B LABORATORY METHODS IN PSYCHOLOGY. (3 credits; 1 lecture, 1 conference, 4 hrs. laboratory). Training in laboratory methods is given by requiring students to prepare and present demonstrations of psychological principles. *Text:* Johnson and Solso, *An Introduction to Experimental Design in Psychology:* A Case Approach, 2nd ed. (Not open to students who have taken 204-211D).
Professor Donderi

204-330A INTRODUCTION TO SOCIAL PSYCHOLOGY. (3 credits; 2 lectures, 1 conference). Introduction to basic concepts and theories in the area of social cognition, attitudes, and interpersonal processes. (Not open to students who have taken or are taking 280-221 or 166-303B).
NOTE: This course is prerequisite for 204-331B.
Professor Taylor

204-331B SELECTED TOPICS IN SOCIAL PSYCHOLOGY. (3 credits; Prerequisite: Psychology 204-330A. No lectures will be given). An intensive study of selected research areas in social psychology. Topics will be selected each year that reflect the interests of the instructor and students. The course will emphasize independent study and student-led seminars in which students present and discuss papers which they have prepared.
Professor Taylor

204-332A INTRODUCTION TO PERSONALITY. (3 credits; 2 lectures, 1 conference). A broad survey of theories of personality. The student is introduced to most of the major theoretical positions.
Professor Aboud

204-333B PERSONALITY AND SOCIAL PSYCHOLOGY. (3 credits; 2 lectures, 1 conference; Prerequisite: Psychology 204-330A). Aspects of personality functioning will be examined from both person-oriented and situation-oriented perspectives. These include such topics as: motivation, self-attributions, values, perceived freedom, attributions of responsibility, altruism and decision-making. Current issues at the interface of personality and social plsychology will be discussed. (Not open to students who have taken 204-433B).
Professor Aboud

- **204-335A FORMAL MODELS OF PSYCHOLOGICAL PROCESSES.** (3 credits; 2 lectures, 1 conference; Prerequisite: An elementary understanding of computer science, probability theory, and finite mathematics, e.g. Computer Science 308-200 A,B, and Mathematics 189-205A, or permission of instructor). Given in alternate years. An introduction to formal theories in psychology, and to related experiments. The content of the course will be partially determined by the interests of the class. Topics such as: individual and group decision making, pattern recognition, problem solving, language processing, mathematical learning theory will be discussed.
Professor Marley

204-336B MEASUREMENT OF PSYCHOLOGICAL PROCESSES. (3 credits, 3 lectures. Prerequisites: Psychology 204-204A,B and introductory calculus). The properties of measurements and techniques for the measurement of psychophysical variables such as brightness and loundness and of attitudinal variables such as similarity, preference, and utility. The intent is to provide data analysis tools of immediate value to experimenters and emphasis will be on current problems in experimental psychology.
Professor Takane

204-337A INTRODUCTION TO ABNORMAL PSYCHOLOGY: DESCRIPTIVE ASPECTS AND NEUROSES. (3 credits; 2 lectures, 1 conference). A survey of the genetic, physiological and environmental origins of intellectual and emotional disorders.
NOTE: This course is prerequisite for 204-338B.
Professor Zuroff

204-338B INTRODUCTION TO ABNORMAL PSYCHOLOGY: BEHAVIOUR PROBLEMS AND TREATMENT. (3 credits; Prerequisite: Psychology 204-337A; 2 lectures and 1 conference). An introduction to psychotic behaviour problems, character disorders, experimental methods of pathology and behaviour modification.
NOTE: This course is prerequisite for Psychology 204-491D.
Professor Zuroff

204-339A WOMEN AND MEN: THE PSYCHOLOGY OF SEX DIFFERENCES. (3 credits; Prerequisite: 204-201D or permission of instructor; 2 lectures, 1 conference). A critical examination of the findings of sex differences (and lack thereof) from a variety of areas of psychological research including infancy, cognitive and social development, neuropsychology, comparative psychology, social psychology, neuropsychology, comparative psychology, social psychology, psychopathology and aging. The complex interactions between biological differences and experiential factors (e.g., social learning) will be examined from a developmental viewpoint, and current views in psychology and sociobiology as to the origins and functions of behavioural sex differences will be discussed.
Professor Wilkinson

204-340A THE PSYCHOLOGY OF LANGUAGE. (3 credits; Prerequisite: An introductory course in Psychology or Linguistics; 3 lectures). The nature of the psychological processes involved in speech and language is considered in relation to maturational and environmental factors.
Professor Genesee

- **204-341B SELECTED TOPICS IN PSYCHOLINGUISTICS.** (3 credits; 2 lectures, 1 conference). Given in alternate years. The course will discuss the psychological aspects of bilingualism in individual, school and society.
Professor Macnamara

204-342A HORMONES AND BEHAVIOUR. (3 credits; 2 lectures, 1 conference). The role of hormones in organization of CNS function, as effectors of behaviour, in expression of behaviours and in mental illness.
Professor Franklin

- **204-343A LANGUAGE LEARNING IN CHILDREN.** (3 credits; 2 lectures, 1 conference). Given in alternat eyears. The course will deal with the different aspects of language learning in children. It will combine the findings of empirical observation with theoretical issues that have been raised in the area. It will attempt to acquaint the student with the psychological literature and with samples of the literature from a number of related disciplines. Throughout, language learning will be related to general cognitive development.
Professor Macnamara

- **204-350B SCIENCE OR PSEUDOSCIENCE?** (3 credits; 3 lectures; Prerequisite: Successful completion of one university year and either: admission requirements to the Faculty of Science or permission of the instructor). This course considers the thin line between science and pseudoscience and tries to define the rules by which disciplined investigators in various fields of knowledge sort out truth from falsehood. Controversies which illustrate the uncertain path of advancement of knowledge will be drawn from several fields of Arts and Science.

204-380D SEMINAR ON EXPERIMENTAL PROBLEMS. (6 credits; 3 hour seminar). For Honours students only. Honours students present current literature reports in individual program areas, for discussion. Then each student starts an original investigation in collaboration with an individual staff member.
Staff

204-400B CONTEMPORARY PSYCHOLOGICAL THEORY. (3 credits; 2 lectures, 1 conference; Prerequisite: Psychology 204-403A). Key theoretical positions will be identified and compared in such areas as development (Piaget), perception (Gibson), personality (Rogers), cognition (Fodor), learning (Skinner), and physiological psychology (Hebb). Psychology will also be compared with its various intellectual neighbours, e.g., logic, linguistics, and mathematics.
Professor Donderi

204-401A THEORIES OF COGNITION. (3 credits; 2 lectures, 1 conference; Prerequisites: Psychology 204-303B; or both Psychology 204-302A and 301B; or permission of instructor). This course examines theoretical problems involved in how human beings understand situations they are in and use these understandings to control adaptive action. We examine the theories of the following psychologists: Aristotle and Aquinas, associationists, the Wurzburg school, S-R theorists, Hebb, Gestalt theories, "man-as-computer" theorists, Piaget and Chomsky. (Not open to students who have taken 204-401D).
Professor Bregman

- **204-402A EXPERIMENTAL PSYCHOPATHOLOGY.** (3 credits; 3 hour seminar. Prerequisites: Psychology 204-337A, 338B and permission of the instructor). Application of concepts and models from experimental psychology to psychopathology. Representative topics might include: animal models of psychopathology, experimental studies of anxiety, psychopathy and obsessive-compulsive behaviour.
Professor Binik

204-403A MODERN PSYCHOLOGY IN HISTORICAL PERSPECTIVE. (3 credits; 3 lectures). A survey of the social and ideological influences on psychology from its philosophical beginnings through the period of the schools to its modern situation.
Professor Ramsay

204-404B ATTENTION AND MEMORY. (3 credits; 2 lectures, 1 conference; Prerequisites: Psychology 204-302A or 303B or 340A or permission of instructor). A critical examination of recent research on how man selects, codes, stores and retrieves information. Phenomena of visual and auditory storage, coding and rehearsal in memory, the nature of forgetting and mechanisms of retrieval are discussed in relation to information processing models.
Professor Ostry

204-405B AGING. (3 credits; Prerequisite: Psychology 204-304D or permission of instructor; 2 lectures, 1 conference). A review and discussion of the available knowledge on how the process of aging affects the individual's intellectual and personality functioning with attention to the interacting processes. Research as related to intellectual and perceptual changes, memory and adaptive capacity will be assessed and problems related to research in this field considered.

204-406B PSYCHOLOGICAL TESTS AND MEASUREMENT. (3 credits; Prerequisite: Psychology 204-204A or B or its equivalent. 2 lectures, 1 conference). An introduction to the theory and practice of psychological and educational measurement. Special attention will be paid to the theoretical problems involved in the use of measurement techniques and statistics in psychology. A wide variety of tests will be discussed in the areas of clinical, social, educational, and personality psychology.
Professor Zuroff

- **204-407A PERCEPTION II.** (3 credits; 2 lectures, 1 conference. Prerequisite: Psychology 204-302A). Advanced topics in perception, including modern approaches to psychophysics; the role of experience in perception; comparative, developmental and cross cultural perspectives; lateralized perceptual processes; perceptual adaptation and aftereffects; perceptual systems in subhuman primates; illusions and visual perception.

204-408A PRINCIPLES OF BEHAVIOUR MODIFICATION. (3 credits; Prerequisites: Psychology 204-337A and 204-301B or permission of instructor; 2 lectures, 1 conference). An introduction to theory and research relevant to the modification of human behaviour. Emphasis will be on those studies in which specific behaviour – sub-optimal or maladaptive – is altered in accordance with contemporary principles of learning. Some opportunity for field work may be available. *Text.* Kanfer & Phillips: *Learning Foundations of Behavior Therapy.*
Professor Poser

- **204-409B PATTERN RECOGNITION AND COMPREHENSION.** (3 credits; Prerequisites: Psychology 204-303B or permission of instructor). *Given in alternate years.* The course presents contemporary psychological theory and data concerning how information about the world is acquired, represented and comprehended. For this year the relevant issues will be pursued by studying the reading process.
Professor Marley

204-410B SPECIAL TOPICS IN NEUROPSYCHOLOGY (3 credits; 2 lectures, 1 conference; Prerequisite: 204-311A or 204-308D). In this course knowledge of basic neuropsychology at the level covered in the 204-311A course will be assumed. Aspect of the literature on the effects of brain lesions and electrical stimulation in man on perception, language, memory and emotion will be explored in depth. The literature on the behavioral effects of lesions in sub-human primates will also be considered and compared to those resulting from comparable lesions in man.
Professor Petrides

204-411D ADVANCED SOCIAL PSYCHOLOGY. (6 credits; 3 lectures. 1 conference). A broad coverage of various sources of influence that shape personalities and give structure to human behaviour. The attempts of social philosophers to explain man's social nature are constrasted with contemporary, more experimental approaches, e.g. cognitive, learning-theory, group process, and cultural.
Professor Lambert

204-412A DEVIATIONS IN CHILD DEVELOPMENT. (3 credits; Prerequisite: Psychology 204-304D or 204-337A or permission of instructor; 2 lectures, 1 conference). This course will consider deviations in perceptual, cognitive, social and emotional development. Emphasis will be on research and theory which underline the complex interactions among constitutional and environmental factors which lead to such disorders as brain injury, psychosis, mental retardation, learning difficulties and behaviour problems. *Text.* Quay & Werry (Eds.) *Psychopathological Disorders of Childhood, 1972.*
Professor Douglas

204-413B COGNITIVE DEVELOPMENT. (3 credits; 2 lectures, 1 conference. Prerequisite: Psychology 204-304D or 303B or equivalent). Advanced study of cognitive processes and their development in childhood. The child's developing conception of object, space, time, causality, logic and number. The relation of cognitive development to learning and problem solving, perceptual development, language development, and intelligence testing.
Professor Shultz

204-414A SOCIAL DEVELOPMENT. (3 credits; 2 lectures, 1 conference. Prerequisite: Psychology 204-304D). Advanced study of the development of social behaviour and social cognition in children. Topics to be covered will include socialization, attachment, aggression, exploration, role taking, communication, self and person perception. The

development of these social processes will be examined within the framework of three general theories of development: psychoanalytic, learning, and cognitive-developmental.
Professor Aboud

• **204-415B TOPICS IN COGNITIVE PSYCHOLOGY.** (3 credits; 2 lectures, 1 conference; Prerequisite: Psychology 204-401A). Contemporary studies of cognition in the areas of problem-solving, conceptualization, imagery, and language. (Not open to students who have taken 204-401D).
Professor Bregman

204-418A PSYCHOLOGICAL BASES OF SEXUAL BEHAVIOUR. (3 credits; 2 lectures, 1 conference). This course is designed to provide a conceptual framework to be applied to present theories and research on sex. Emphasis is on methodological issues in the study of sexual behaviour, personality and ethological theories of psychosexual development, clinical sexual problems and the social and ethical issues present in this area.
NOTE: This course is restricted to U3 Honours and Major students.
Professor Harris

204-421A PERCEPTUAL DEVELOPMENT. (3 credits; 2 (1½ hour) lectures; Prerequisites: Psychology 204-302A, 304D). Theoretical and empirical issues in Perceptual Development. Vision, audition, language perception, and intermodal coordination in infancy. Visual information processing, pattern perception, representation, intermodal transfer, and reading in childhood. The course is for students with a serious interest in Developmental Psychology and/or Perception.
Professor Mendelson

204-422B NEUROCHEMICAL BASIS OF BEHAVIOUR. (3 credits; 2 lectures, 1 conference; Prerequisite: Psychology 204-308D or 342A or permission of instructor). Anatomical, biochemical and plhysiological aspects of neurotransmitter systems in the brain and current theories of the functionof these systems in normal and abnormal behaviour and the actions of psychotropic drugs.
Professor Franklin

204-423A ADVANCED PROBLEMS IN PSYCHOBIOLOGY: MOTIVATION (3 credits; 3 hour seminar; Prerequisite: Psychology 204-308D or permission of instructor). Topics covered in this course will be centred around the problems of motivation, emotion, and reinforcement, and the role of the limbic system in these functions. Student participation in a seminar format will be encouraged, in an attempt to study these problems in terms of the research and theories which bear on them.
Professor White

• **204-425A LANGUAGE AND THOUGHT.** (3 credits; Prerequisite: a course in psycholinguistics or in linguistics or in the philosophy of language; 2 lectures, 1 conference). *Given in alternate years.* The course covers cognitive psychology from the perspective of language – special reference to concepts, statements and the implications of statements. The course is for students with a serious interest in language. (Not open to students who have taken 104-425).
Professor Macnamara

• **204-426A ADVANCED PROBLEMS IN PSYCHOBIOLOGY: PERCEPTION.** (3 credits; 3 hour seminar; Prerequisite: Psychology 204-308D or permission of instructor). One or more sensory systems (visual, auditory, somesthetic or olfactory) will be chosen for detailed study. The integration of physiological and psychological data will be emphasized.
Professor Franklin

204-427A MOTOR CONTROL AND HUMAN PERFORMANCE. (3 credits; 2 lectures, 1 conference; Prerequisites: Psychology 204-302A or 303B or 308D or permission of instructor). A systematic examination of organization and processing in motor systems, drawing on models and data from both behavioural and physiological studies. Topics include properties of muscle receptors, the role of skeleto-motor reflexes in the regulation of movements, characteristics of motor programs with reference to locomotion and human movement production, and current topics in motor theory.
Professor Ostry

• **204-428B HUMAN COMMUNICATION AND ITS DISORDERS.** (3 credits; 3 lectures. Prerequisites: Linguistics 104-200A,B, 201A,B; Psychology 204-304D or 337A). An examination of the acquisition, maturation and function of language skills in children and adults. The unique relationships among hearing, speech, and language functions will be explored. The lecture seminar topics will include the analysis of both normal and aberrant communication behaviours.

204-429A HEALTH PSYCHOLOGY. (3 credits; 2 lectures; Prerequisite: Psychology 204-337A or, in the case of advanced undergraduates, Psychology 204-201D or equivalent, and permission of instructor). A survey of health psychology and a review of the psychosocial and psychophysiological factors leading to the development and maintenance of physical illness and health. Major assessment and intervention strategies will be covered and a review of such specific problem areas as cardiovascular disease risk reduction, coronary prone behaviour, headache and chronic pain will be undertaken. Both theoretical and clinical issues will be emphasized.

204-430A,B CONSTITUTIONAL FACTORS IN BEHAVIOUR. (3 credits; Seminar). Individual differences in motivational and temperamental characteristics will be examined in relation to constitutional-experimental interactions with special reference to genetic factors, blood-chemistry variables, and environmental influences.
Professor Stern

204-431B THE ENVIRONMENT AND THE DEVELOPING BRAIN. (3 credits; 2 lectures, 1 conference; Prerequisites: Psychology 204-302A or 311A or 308D or 304D). This course will examine the effects of normal and abnormal environmental conditions on the development of brain and behaviour. The role of early "neural plasticity" in normal development will be discussed and the detrimental effects produced by such abnormal conditions as sensory deprivation and prenatal malnutrition will be examined. Current models of early plasticity which have evolved from studies of non-human species will be evaluated in terms of their applicability to the development of human brain and behaviour.
Professor Wilkinson

204-432A COGNITIVE SCIENCE. (3 credits; 2 lectures, 1 conference. Prerequisites: Any two of 204-302A, 303B, 335A, 340A, 206B, or permission of instructor). Cognitive science is a new field concerned with research on intelligent behaviour. It draws upon the methods of artificial intelligence and linguistics as well as traditional psychological experimentation. Recent theories of language processing, knowledge representation, problem solving, and reasoning will be considered, as well as some methodological and meta-theoretical issues.
Professor Seidenberg

204-434B SELECTED TOPICS ON PSYCHOTHERAPY AND BEHAVIOUR THERAPY. (3 credits; 2 lectures, 1 conference; Prerequisite: Psychology 204-337A). This course will briefly evaluate the therapeutic intervention strategies with neurotics. Approaches to individual, marital and group therapy will also be discussed. The difficulties in specifying objectives for intervention, ethical issues, and research on the therapeutic efficacy will be discussed.

204-450D EXPERIMENTAL PROBLEMS. (6 credits; Prerequisites: Psychology 204A,B, 305A or 307B, 312B and permission of instructor). Practical experience in research methods. The class is divided into sections of 10-12 students which meet for 3 hours each week. Specific procedures may vary among sections. All students, under the supervision of a professor/adviser will be expected to design, carry out and report on an experiment, Students will present reports of their research in seminars throughout year. Only for Major or special students in U3 who intend to proceed to graduate school.

NOTE: Students will be admitted on the basis of a written application on forms available from the Department (Room W8/30). Applications must be submitted by September 1.
Professor Genesee and Staff

- **204-455D RESEARCH METHODS IN PSYCHOLINGUISTICS.** (6 credits; 3 hour seminar. Restricted to graduate and final year students in psychology and linguistics). Various research approaches used by psychologists and linguists will be critically evaluated. Students will select and conduct a major research project which they will discuss with other seminar members during the course of the year. Each student will have a staff adviser who will direct the student's research.
Professor Genesee

204-457A PSYCHOLOGICAL PROBLEMS OF THE PHYSICALLY HANDICAPPED CHILD. (3 credits; limited to final year psychology students; 3 lectures, 1 conference). This course will be concerned with the psychological development of deaf and physically handicapped children.
Professor MacDougall

204-458B METHODS OF BEHAVIOUR CHANGE. (3 credits; Prerequisites: Psychology 204-408IA and permission of instructor; 1 lecture, 2 conferences). Various techniques of behaviour change will be evaluated in light of their empirically established efficacy. Behavioural assessments will be carried out on specific problems referred from hospitals, schools or the community-at-large. Students will have an opportunity to deal with these problems in the context of supervised field work.
Professor Poser

204-480B FOUNDATIONS OF MODERN PSYCHOLOGY. (3 credits. For Honours students only. 3 lectures). The historical, philosophical, and theoretical bases of modern psychology. Emphasis on understanding current work in selected areas of psychology (e.g., learning, cognition, perception, personality) in terms of the development of these areas. The goal is to explore the shared orienting assumptions and empirical methods that link seemingly diverse areas of Psychology. (Not open to students who have taken 204-480D).
Professor Seidenberg

204-481D EXPERIMENTAL PROBLEMS. (6 credits; 2 hours plus laboratory; for Honours students only). A seminar on current problem areas. Supervised investigation of a special field.
Staff

204-491D ADVANCED STUDY IN BEHAVIOURAL DISORDERS. (6 credits; Prerequisites: Psychology 204-337A and 338B and permission of instructor; 1-2 hours lecture or tutorial per week plus a field experience requirement). A critical examination of topics in abnormal and clinical psychology.

Emphasis will be on analysis of theoretical positions and empirical findings as they relate to both etiology and treatment.
Professor Piper

204-492A/493B SEMINARS IN SPECIAL TOPICS. (3 credits each). These seminars are offered by special arrangement between interested professors and students. A student may not register in more than one of these seminars in an academic year. Restricted to U3 students.
Staff

204-501A AUDITORY PERCEPTION. (3 credits; 2 lectures, 2 laboratories; Prerequisites: Psychology 204-302A or permission of instructor). Basic acoustics and biology of hearing; computer-based analysis and synthesis of sound; basic sensory dimensions, their biology and measurement; recovery of component signals in complex environments; auditory memory; human production and perception of and machine analysis and synthesis of speech; perception of musical sounds. Laboratory project in computer-based analysis and synthesis of sound. Suitable for graduate students or advanced undergraduates with some background in perception or acoustics.
Professor Bregman

4 ALPHABETICAL LIST OF STAFF

ABOUD, F.E., B.A.(Tor.), M.A., Ph.D. (McG.) **Psychology**

ABRAMOWITZ, A., B.A., M.Ed.(McG.) **Director, Information and Liaison Office**

ACHESON, N.A., A.B.(Harv.), Ph.D.(Rockefeller) **Microbiology and Immunology**

ADAMS, C.J., A.B.(Baylor), Ph.D.(Chic.) **Middle East Studies; Religious Studies; Director, Institute of Islamic Studies**

ADDISON, J.R., B.Sc., B.Eng., M.Sc., Ph.D.(McG.). **Physics**

AGUAYO, A.J. M.D.(Cordoba) **Physiology**

ALI KHAN, Z., B.Sc.(Bilar, M.Sc. (Karachi), Ph.D.(Tulane) **Microbiology and Immunology**

AMASUNO, M., Lic.Fil., Dr.Fil.(Salamanca) **Hispanic Studies**

AMSEL, R., B.Sc., M.Sc.(McG.) **Psychology**

ANDERSON, B.J., B.A.(Sask.), M.F.A. (Alta.), Ph.D.(Ill). **English**

ANDERSON, H.S., A.B., M.Litt. (Pitt.), Ph.D. (Temple) **English**

ANDERSON, R.M., B.Sc. (Lond.),Ph.D. (Lond.), A.R.C.S., D.I.C. **Parasitology**

ANDERSON, W., B.Eng., Ph.D.(McG.) **Mathematics**

ANGENOT, M., L.Phil. & Lett., Dr.Phil. & Lett. (Brussels) **French Language and Literature; Comparative Literature Program**

ARCHIBALD, F.S., B.Sc. (Acad.), M.Sc. (Dal.), Ph.D. (McG.) **Microbiology and Immunology**

ARMOUR, J., AACCA **Vice-Principal (Administration and Finance)**

ARMSTRONG, W.R., M.A., Ph.D. (Vic., Wellington), M.Sc. (Lond.) **Geography**

ARNOLD, A., D.Lett.(Frib.), F.R.S.C. **German**

ARONSON, D.R., B.A. (Wesleyan), A.M., Ph.D. (Chic.) **Chairperson, Anthropology; African Studies Program**

ARONSON, J.H., B.Sc. (Ulster), B.S.W., M.S.W. (McG.) **Social Work**

ARVANITAKIS, K., M.A., M.D., C.M., Dip. Psychiat. (McGill), F.R.C.P.(C.), R.S.M.A.(U.K.) **Philosophy (Faculty of Medicine)**

ASIMAKOPULOS, A., M.A.(McG.), Ph.D.(Camb.), F.R.S.C. **Economics**

ATTWOOD, D.W., A.B.(Calif.), Ph.D. (McG.) **Anthropology**

AUBERT, J.P., L. ès L.(Lausanne) **French Language Centre**

AUSTIN, G.L., M.A.(Cantab.), M.Sc., Ph.D.(Cant.) **Physics**

AUSTIN, P.M., M.A.(Corn.), B.A., Ph.D.(Tor.) **Chairman, Russian and Slavic Studies**

AVIS, D.M., B.Sc.(Wat.), Ph.D.(Stan.) **Computer Science**

BAINES, M.G., B.Sc., M.Sc., Ph.D.(Queen's) **Microbiology and Immunology**

BAKER, A.G., B.A.(U.B.C.), M.A., Ph.D.(Dal.) **Psychology**

BARR, M., A.B., Ph.D.(Penn.) **Mathematics**

BARRIER, D., B.A.(Man.), Dip. in S.W.(Tor.) **Social Work**

BATES, D.G., B.A., M.D.(W.Ont.), Ph.D.(Johns H.) **History and Philosophy of Science Program (Faculty of Medicine)**

BEACH, E.F., B.A.(Qu.), A.M., Ph.D.(Harv.) **Emeritus Professor, Economics**

BEAUDET, A., M.Sc., Ph.D., M.D.(Montr.) **Anatomy**

BECKER, A., B.Eng., M.Sc., Ph.D.(McG.) **Geological Sciences**

BELANGER, A.J., B.A. (Montr.), B.Com., M.A. (McG.), Ph.D.(Laval) **Centre D'Études Canadiennes-Françaises**

BELL, G.A.C., B.A., D.Phil. (Oxon.) **Biology**

BELL, R.E., C.C., M.A.(U.B.C.), Ph.D.(McG.), D.Sc. (U.N.B., Laval, Montr., U.B.C., McG.(, LL.D.(Tor.), D.C.L.(Bishop's), F.R.S., F.R.S.C. **Physics**

BELLEAU, B., M.Sc.(Montr.), Ph.D.(McG.), F.R.S.C. **Chemistry**

BELLERT, I., M.A., Ph.D., Dr.Hab.(docent) (Warswa) **English; Linguistics**

BENAROYA, S., Ph.D.(Montr.) **Psychology**

BENNETT, G.C., B.A., B.Sc.(Sir G. Wms.), M.Sc., Ph.D.(McG.) **Anatomy**

BERGERON, J.J.M., B.Sc.(McG.), Ph.D., D.Phil. (Oxon.) **Anatomy**

BERGMANN, R., Ph.D.(Marburg), B.L.S.(McG.) **Art History**

BERTOS, R., M.A.(Athens), Ph.D.(Munich) **Chairman, Art History**

BINIK, I.M., B.A.(N.Y.U.), M.A., Ph.D.(Penn.) **Psychology**

BIRD, J.B., M.A.(Cantab.) **Chairman, Geography**

BIRKS, R.I., B.A., M.Sc., Ph.D. (McG.) **Physiology**

BIRMINGHAM, M.K., B.A. (Bennington), M.Sc. (McG.) **Biochemistry**

BISSON, M.S., Ph.D.(Calif.) **Anthropology; African Studies Program**

BLACK, J.H., B.A.(Tor.), M.A.(Kent & Roch.), Ph.D.(Roch.) **Political Science**

BLAISE, B., B.A.(Calc.), M.A.(Bda.), M.F.A., Ph.D.(Iowa) **English**

BLANC, M.Z.F., M.D.(Oporto), C.S.P.Q. **Microbiology & Immunology**

BLOSTEIN, R., B.Sc., M.Sc., Ph.D.(McG.) **Biochemistry**

BOLKER, H., B.A., M.A.(Qu.), Ph.D.(Yale) **Chemistry**

BOLL, W.G., B.Sc., Ph.D.(Manc.) **Biology**

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The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees, schedules and the revision or cancellation of particular courses.

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CALENDAR OF DATES FOR SESSION 1982-83

1982

May 3 - June 22	Summer Session courses starting in May
May 24	VICTORIA DAY. Administrative offices will be closed
June 8	Convocation
June 24	LA FÊTE NATIONALE DU QUÉBEC. Administrative Offices will be closed
July 1	DOMINION DAY. Administrative Offices will be closed on June 30
July 5 to August 19	Summer Session Courses starting in July
August 2	Deadline for applications for Special and Visiting students for admission in September
Sept. 6	LABOUR DAY. Administrative Offices will be closed
Sept. 8	Registration in all years for Undergraduate Management students
Sept. 13	First day of lectures for all Undergraduate Management courses
Sept. 20 to Sept. 24	Change of course period for all Undergraduate Management courses
Sept. 16	Late registration
Oct. 11	THANKSGIVING. Lectures cancelled. Administrative Offices will be closed
Oct. 8	Deadline for withdrawing (W) from 'A' courses
Oct. 18 to Oct. 22	Verification period
T.B.A.	Convocation
Nov. 19	Deadline for withdrawing (W) from 'D' courses
Dec. 1	Deadline for applications for Special and Visiting students for admission in January
Dec. 10	Last day of lectures for fall term
Dec. 13 to Dec. 23	EXAMINATIONS in first term Management Courses
Dec. 25	CHRISTMAS. Administrative Offices will be closed Dec. 24 at 5:00 p.m. until Jan. 3, 1983, at 9:00 a.m..

1983

Jan. 1	NEW YEAR'S DAY.
Jan. 5	First day of lectures for all'Management Students for winter term
Jan. 6	Winter term registration for new students
Jan. 17 to Jan. 21	Change of course period for 'B' courses in Management
Feb. 4	Midterm weekend holiday (Montreal campus). Lectures cancelled
Feb. 11	Last day to withdraw (W) from 'B' courses in Management
Feb. 14 to Feb. 18	Verification period
Feb. 24 and 25	Study Break - Lectures cancelled
Apr. 1 to Apr. 4 (inclusive)	EASTER, Administrative offices will be closed from 5:00 p.m., Mar. 31 until 9:00 a.m., Apr. 5 Lectures cancelled for this period.
Apr. 8	Last day of lectures for 'B' term and 'D' courses in Management
Apr. 14 to Apr. 29	EXAMINATIONS in Management courses
May 23	VICTORIA DAY. Administrative offices will be closed.
T.B.A.	Convocation

1 STAFF

1.1 ADMINISTRATIVE OFFICERS

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2 GENERAL INFORMATION

THE FACULTY OF MANAGEMENT

In establishing the Faculty of Management in 1968 McGill University recognized the academic importance of the inter-disciplinary studies that had, up to that time, been carried on in two of its schools – the old School of Commerce in the Faculty of Arts and Science, and the newer Graduate School of Business in the Faculty of Graduate Studies and Research.

Since then both the graduate and undergraduate programs have been completely revised, to the enrichment of both.

A sum from one of McGill's major campaigns in 1956 had been set aside and ear-marked for a Management Building, but it was not sufficient to enable construction to proceed. To the great good fortune of the University, the late Samuel Bronfman, while a Governor of the University, made the key donation which enabled McGill to plan and build the Samuel Bronfman Building. It is located next to the Redpath and McLennan Libraries, on the border of the Campus and fully accessible to the community we serve.

The Howard I. Ross Management Library is named for a former Chancellor of the University who became the Faculty's first Dean in 1968. It occupies the complete second floor of the Bronfman Building, and consists of over 200,000 books, periodicals and pamphlets in the fields of Economics, Business, Industrial Relations, and Management. The materials are readily available in the library reading room. The facilities of the McLennan Library, and the many other University Libraries are also available to students.

AIMS OF THE B.COM PROGRAM

Management means getting things accomplished as effectively as possible. The ideal manager is a well-rounded person, with strong character, good judgment, breadth of vision and thorough competence in the management skills – behavioural and quantitative – which are being developed in this age of rapid technological change.

When everything is changing at such a fantastic pace, it is no longer possible to train good managers by simply passing on to them wisdom developed in a past age. Experience can still be a great teacher, but only if intelligently interpreted and applied. Our concepts must not be static, we must develop managers who can meet new challenges as they arise.

The different qualities required in a competent manager are teachable in varying degrees. Our aim is to give students an opportunity to master new management techniques. We believe there are certain management skills which constitute "core" subjects which every manager should have – but beyond these, we encourage students to follow lines of interest through which they will emerge broadly educated. A good manager must be able to understand and to work with both the generalists and specialists that are required in our complex society.

SUMMARY OF PROGRAMS OFFERED THROUGH THE FACULTY OF MANAGEMENT

Bachelor of Commerce Degree – A three-year program of full-time study (which can also be pursued on a part-time evening basis) designed to prepare the student for the B.Com. degree.

Evening Certificate and Diploma Courses – Courses offered jointly by the Faculty and the Centre for Continuing Education in Accounting, Business and Management, and related subjects to enable qualified evening students to meet the requirements of certain professional societies. *(See Announcement of the Centre for Continuing Education).*

Master of Business Administration Degree – A two-year program of full or part-time study leading to the Master of Business Administration degree awarded through the Faculty of Graduate Studies and Research, for qualified students holding an undergraduate degree.

Ph.D. in Administration – A three phase program in preparation, specialization, and dissertation offered jointly by the four Montreal area universities open to students normally holding an M.B.A. or other Master's degree with high standing.

McGill Management Institute – The Institute offers a series of courses, seminars, and other training activities for business executives.

3 APPLICATIONS AND ADMISSIONS

The academic year at McGill runs from early September until early May, with approximately two weeks vacation at Christmas. The normal period of admission is in September; however it is possible for a student to commence the program in either January or the Summer Session.

Students wishing to enter the Bachelor of Commerce program in September must apply in writing, before March 1, to:

Admissions Ofice,
McGill University,
F. Cyril James Building,
845 Sherbrooke St., West,
Montreal, PQ H3A 2T5

Students presently enrolled in another Faculty of the University wishing to transfer to the Bachelor of Commerce program in September must apply in writing not later than July 1st to:

Associate Dean,
Faculty of Management,
McGill University,
1001 Sherbrooke St., West,
Montreal, PQ H3A 1G5

Students wishing to enter the program in January must submit applications by November 1st. Further information regarding non-September admissions, course-sequences, etc., can be obtained from the Undergraduate Program Advisers. All applications to enter the University must be accompanied by a non-refundable fee of $15.00 payable by certified cheque or money order in Canadian funds made out to McGill University. There is no application fee for transfer between McGill Faculties.

GENERAL INFORMATION FOR NON-CANADIAN STUDENTS

To be eligible to study in Canada, non-Canadian students and students who are not permanent residents **must** first obtain a student visa from a Canadian Embassy or Consulate in their area and must present to the Embassy or Consulate both a letter of acceptance from McGill and a certificate of acceptance from the Québec Government. Student visas can be renewed annually in Canada subsequent to the students' registration.

Further information may also be found in the McGill University *General Announcement,* available at the Registrar's Office.

COMPULSORY HEALTH INSURANCE FOR NON-CANADIAN STUDENTS

All full-time non-Canadian students and students who are not permanent residents **must** enrol in the McGill Non-Canadian Health and Accident Insurance Plan. Further information concerning this Plan is available at Registration.

ENTRANCE QUALIFICATIONS

1. Québec Students

Stuents who have satisfactorily completed a CEGEP or program which includes good standing in four one-term courses in Mathematics: 101, 103, 105, and 203 will be considered for admission to the first year of the full- or part-time B.Com program. The Faculty is not bound to accept all candidates who have satisfied minimum admission requirements.

The University recognizes and stresses the desirability of students in their CEGEP program receiving as broadly based a background as possible in Mathematics and the Social Sciences before proceeding to a Bachelor of Commerce degree. To this end, the student is strongly discouraged from over-emphasizing the Commerce orientation while in the pre-university program. Those students who select Accounting as their Management Concentration Group and who intend to qualify as C.A.'s after graduating, are urged to include courses in Micro and Macro Economics in their CEGEP program.

2. Non-Québec Students

Students from outside the Province of Québec, may be considered for admission to either a three year or four year program depending upon their academic background. Further information can be found in the *General Announcement.*

Applicants whose mother tongue is not English, and who have not completed a CEGEP program in the Province of Québec, must submit acceptable evidence of facility in English before an application for admission can be considered. The Faculty endeavours to enable a wide range of students, from many different countries, to enrol in the Bachelor of Commerce program; nevertheless, a reasonably high competence in reading English and in writing either English or French is expected from all students. Although lectures, texts, and reference material will, in general, be in English, students will be permitted to write their examinations and term papers in French.

3. Advanced Standing

If students feel that they merit admission with advanced standing on the basis of their academic background, they may apply for such advanced standing in their initial applications for admission.

4. Mature Student Admission Policy

Residents of Canada who will be 23 years of age or older by September 1 (for admission to the Fall Session) or January 1 (for admission to the Winter Session) and who lack the academic background normally required for admission may apply for entrance as mature students.

Individuals interested in being considered for entrance under this policy should contact the Admissions Office for further information.

5. Readmission

A student wishing to return to the Faculty after an absence of a portion of an academic year or more must apply in writing to the Associate Dean.

4 FEES

The University reserves the right to make changes without notice in the published scale of fees.

Fees are refundable under special conditions described in the *General Announcement.*

The tuition fees for the Bachelor of Commerce program are $19.00 per credit, or $137.60 per credit for foreign students (see *General Announcement* for details), plus $85.00 Student Services fees and $39.00 Students' Societies fees.

The schedule of fees for Part-time, Special and Visiting students is given in the *General Announcement.*

REGULATIONS FOR PAYEMENT OF FEES

NEW STUDENTS

Students entering the University for the first time are required to pay the first instalment of their fees either by mail or in person at the Accounting Office within 10 days after registration and the second instalment before January 15, 1982.

RETURNING STUDENTS

Students who have completed one or more years and intend to register in the succeeding year must pay one half of the total sessional fee by mail or in person to the Accounting Office before August 18, 1982, otherwise they will not be permitted to register. Instructions for paying fees in advance will be mailed to all returning students, either with their Sessional Reports of Standing or a short time later. Students who have been notified by the University of the award of a scholarship, bursay or student loan, and who require this award for payment of the Fall term fees, must obtain from the Student Aid Office, McGill University, a *Permit to Delay Payment of Fees.*

The Winter term fees are due by January 15, 1983. A late payment fee is charged for payment after this date.

LATE REGISTERING STUDENTS

Students registering late **must** pay their fees at the time of registration.

As soon as possible after the prescribed dates for the payment of tuition fees the Chief Accountant will send to the Registrar's Office a list of the registered students who have not paid these fees. Transcripts of record, diplomas and permission to re-register will be withheld until such time as tuition fees as well as outstanding residence fees, library fines or other charges are paid.

SPECIAL FEES AND PENALTIES

Application for Admission (for new students only)	$15.00
Late registration	50.00
Late payment (after specified date)	
First 30 days	10.00
After 30 days	25.00
Application for Graduation Fee	25.00
Duplicate diploma	15.00
Certified transcript of students' record:	
First copy with each order	2.25
Additional copies, made at same time, each	.75
Re-reading examination paper	10.00
Changes in course, each change after specified change of course period	5.00

5 SCHOLARSHIPS, PRIZES, MEDALS AND FINANCIAL AID

Full information is given in the *Undergraduate Scholarships and Awards Announcement,* which may be obtained from the Registrar's Office. Awards are generally made during the Summer on the basis of the academic standing in the preceding Fall and Winter terms; to be *eligible for an award, the student must have successfully completed at least 27 credits during the preceding academic session.* The student need not make application for any of the following awards; each student is automatically considered by the Faculty Scholarships Committee for each award for which the student is eligible. The only exception is the Stephen S. Goldbloom Memorial Prize for which the Faculty Scholarships Committee welcomes recommendations, substantiated by curriculum vitae, from individual students, student groups and clubs.

ARTHUR ANDERSEN & CO. SCHOLARSHIP. – Value $750, to be awarded to an accounting student entering the final year of the B.Com program and planning to continue studies after graduation with a firm of Chartered Accountants. Awarded by the Faculty of Management Scholarships Committee for overall academic excellence.

ROBERT BRUCE SCHOLARSHIP. – $100, tenable for two years, bequeathed by the late Robert Bruce, of Québec City and awarded for high standing in the examinations at the end of the First year.

CANADA PERMANENT TRUST. – Two annual prizes of $500 and $300, awarded by the Faculty of Management to student entering their final year of the B.Com program, for excellence in the first two years of their program.

CHARTERED ACCOUNTANTS STUDENTS' SOCIETY OF QUÉBEC PRIZE IN ACCOUNTANCY AND AUDITING. – Established in 1974 by the Chartered Accountants Students' Society of Québec. A prize of $100 is awarded to the student receiving the highest grades in Accountancy and Auditing in the final year.

CLARKSON GORDON PRIZE. – $300, awarded at the end of the Final year to the student who obtains the highest standing in Accounting and Auditing.

COMMERCE 1925 AWARD. – Two awards, of $500 and $250, to the students obtaining the highest marks in Accountancy at the end of the final year.

DELOITTE, HASKINS & SELLS PRIZE. – Value $500. Awarded annually by the Faculty of Management Scholarships Committee to the outstanding graduating student in the Accounting program demonstrating excellence in Taxation.

DR. J.A. COOTE PRIZE IN ORGANIZATIONAL BEHAVIOUR AND PERSONNEL. – $150, awarded to the graduating B.Com student with high standing in the Organizational Behaviour and Personnel Concentration Group.

FACULTY OF MANAGEMENT PRIZES IN COMPUTERS AND SYSTEMS, IN POLICY, AND IN MANAGEMENT SCIENCE. – $100, awarded to the graduating B.Com student with high standing in each of the above three Concentration Groups.

FINANCIAL EXECUTIVES INSTITUTE, SILVER MEDAL. – Offered by the Financial Executives Institute Montreal Chapter to an undergraduate student graduating with high overall average in Finance.

L.J. FORGET & COMPANY AWARD. – Values of $500 and $300, established in 1973 by L.J. Forget & Company. Awarded annually by the Scholarships Committee of the Faculty of Management for excellence in the Finance courses in the Bachelor of Commerce Program.

DR. M. RICHARD GELFAND PRIZE IN MARKETING. – $150, awarded to the graduating B.Com student with high standing in the Marketing Concentration Group.

GENERAL MOTORS SCHOLARSHIPS. – Established by General Motors of Canada and open to outstanding young Canadian men or women. Normally one scholarship is awarded annually in the form of a two year award of $1000 per year. For further details, please consult the scholarships Office.

STEPHEN S. GOLDBLOOM MEMORIAL PRIZE. – Value $200. Established by friends and classmates in memory of Stephen S. Goldbloom, a second-year Management student active in Campus student life and a student representative on the Board of Governors, who passed away during the summer of 1975. To be awarded to a student graduating in the Faculty of Management with good academic standing having made a notable contribution to student life.

HUDSON'S BAY COMPANY SCHOLARSHIPS. – Two awards to be made annually to students entering the first year of the Bachelor of Commerce program, tenable over the usual three years of the program, payable in three annual instalments of $750, renewal contingent upon maintaining high academic standing; total value over the three years of $2,250. All entering students will be eligible but preference will be given to applicants whose mother tongue is French.

INSTITUTE OF INTERNAL AUDITORS PRIZE. – A $100 prize to be offered to an outstanding graduating student in Auditing. Awarded by the Faculty of Management Scholarships Committee.

INTERNATIONAL SEA-LAND SHIPPING SERVICE LTD. SCHOLARSHIP. – Value $600. Awarded by the Faculty of Management Scholarships Committee to a student in the B.Com program having completed the second year and proceeding to the final year. Awarded on the basis of high academic standing in the first two years of the program. Preference will be given to Bilingual students with an interest in the Transportation field.

JOSEPH H. JACOBS PRIZE. – Value $150. Established under the will of the late Joseph H. Jacobs is awarded as a prize for Second year Accountancy.

SIR WILLIAM MACDONALD SCHOLARSHIPS. – Two scholarships of $800 each, open to all students in the second and third years.

MARSH AND McLENNAN AWARD. – A scholarship of $570, covering full tuition, awarded to a student entering the final year of the B.Com program, for excellence in the first two years of the program.

JAMES McGILL AWARDS. – (For students first registered after September 1977). Value $500, awarded to students with outstanding merit from anywhere in Canada proceeding to degrees in any faculty. Renewable each year provided academic standing satisfactory to the University Scholarships Committee is maintained. Candidates with financial need may receive up to a total of full tuition fees plus the cost of board, residence and books. Students in need should complete an Application for Financial Aid which can be obtained from the Student Aid Office.

LADDIE MILLEN MEMORIAL PRIZES. – Established by Mr. J. Ernest Millen in memory of his son, Laddie Millen, who was killed in action in World War I. Three prizes, in the amounts of $500, $300 and $200, will be available annually to students in the Bachelor of Commerce Program. Two graduating B.Com. students who have earned scholarship standing in the Major in Labour-Management Relations program will be eligible for awards of $500 and $300. An additional award of $200 is available to the B.Com student submitting the best term paper in the Introductory course in Labour-Management Relations. Decisions with respect to the granting of these awards will be made by the Associate Dean, on the advice of the committee of Labour-Management Relations faculty members. The awards will be made only if candidates are of sufficiently high calibre.

MARJORIE PIKE SCHOLARSHIP. – $1,000, established in 1980 by the Advertising and Sales Executives Club of Montreal. Awarded for academic excellence in the area of Marketing to a student entering the final year of the B.Com. program. Awarded by the Faculty of Management Scholarships Committee.

McGILL ALUMNAE SOCIETY PRIZE. – $100 presented annually upon graduation to a distinguished student for excellence and high academic standing. Preference is given to *women* students.

MISAWA HOMES PRIZE IN INTERNATIONAL BUSINESS. – $150, awarded to the graduating B.Com. student with high standing in the International Business Concentration Group.

PRICE WATERHOUSE & CO. AWARD. – Value $250, awarded by the Scholarships Committee of the Faculty of Management to a student in the B.Com. program completing his Second year and proceeding to his final year and planning to continue his studies with a practising firm of chartered accountants. The winner must have high standing in the Second year examinations and outstanding academic record, ability.

HERBERT E. SIBLIN AWARD. – Value $250. Established in 1981 by Herbert E. Siblin, B.Com. '50, C.A. Awarded annually by the Faculty of Management Scholarships Committee to a student of outstanding merit entering the second year of the B.Com. program.

HYMAN HERBERT STEIN AWARD. – Approximately $350, in memory of the late Hyman Herbert Stein, B.Com. 1925, for an award for a student entering the second year of the three-year Commerce Program. Ability and financial need will be taken into consideration when making the award.

TOUCHE ROSS & CO. AWARD. – An award of $250 to a student who has completed the Second year, will be entering the final year in the B.Com. program, and who intends on graduation to qualify as a Chartered Accountant. Awarded on high standing in the Second year and on academic record, ability and personality.

SIR EDWARD BEATTY GOLD MEDAL. – A gold medal endowed by the late Sir Edward Beatty, former Chancellor of the University, awarded to the student in the B.Com. program with the highest distinction in Economics. Awarded, at present on the aggregate marks for the three full year courses. Principles of Economics (or Honours alternatives), Money and Banking, and Economic Analysis (or Honours alternatives).

CECIL VINEBERG SCHOLARSHIP. – Value $600. Established in 1978 by the firm of Richter, Usher and Vineberg, Chartered Accountants, in honour of Mr. Cecil Vineberg, the senior member of the firm. Open to Accounting students entering the final year of the B.Com. program who intend to qualify as Chartered Accountants upon graduation. Awarded at the end of the second year on the basis of excellence in the second year Accounting courses and the student's overall academic record, upon recommendation of the Faculty of Management Scholarships Committee.

ROY M. WOLVIN MEMORIAL SCHOLARSHIP. – A scholarship of $500 is given by Mrs. Roy M. Wolvin in memory of her husband. Awarded for high academic standing.

WOMEN'S PERSONNEL GROUP OF MONTREAL PRIZE. – A prize of $50 made available in alternate years to McGill and to the University of Montreal. At McGill the selection is made by the Director of the Industrial Relations Centre in consultation with the appropriate departments in the Social Sciences and awarded to the woman student in any year of the Faculty of Management who shows the most promise and intends to continue, either at the University or in industry, in the general field of personnel and/or human relations. The award will be available at McGill in 1968 and thereafter biennially.

6 STUDENT SERVICES AND RESIDENTIAL FACILITIES

Full information concerning Student Services and Residential Facilities is given in the *General Announcement* available from the Registrar's Office.

MANAGEMENT UNDERGRADUATE SOCIETY

The Management Undergraduate Society (M.U.S.) represents all undergraduate students in the Faculty of Management, and is charged with representing the students' views both inside and outside the Faculty. Activities sponsored by the M.U.S. include Focus on Business Week, a Faculty newspaper, a Faculty yearbook and several clubs, each representing an elective group. The clubs (Association of McGill Accounting students; AIESEC (Association Internationale des Étudiants en Sciences Économiques et Commerciales); Crown Investments Society; Industrial Relations Association; Marketing Club; Management Computer and Systems Association) organize career information sessions, tours, guest speakers as well as other activities to complement and supplement regular classes.

7 B.COM. PROGRAM REQUIREMENTS

ACADEMIC REQUIREMENTS FOR GRADUATION

a) A student is graduated upon satisfactory completion of the full number of credits indicated in the letter of acceptance, subject to the curriculum requirements. For students entering with a CEGEP Diploma, the number of credits will generally be 90. Students from outside the Province of Québec who have not completed the equivalent of CEGEP graduation may be admitted to the program, but will require more than 90 credits for their degree.

b) All students are expected to conform to the curriculum set out below. A student wishing to depart from that program must obtain written permission from the Associate Dean.

RESIDENCE REQUIREMENTS

a) A student who has transferred with advanced standing to the Faculty of Management from another Faculty within this University, is required to complete a minimum of 60 credits while registered in the Bachelor of Commerce program, including such required courses as are deemed necessary, to become eligible for the degree of Bachelor of Commerce.

b) Completion of the degree requirements normally will require three years of study. A maximum of four years is permitted, however, for completion of the requirements for the degree. In exceptional circumstances, this maximum requirement may be extended by the Associate Dean.

ACADEMIC COUNSELLING

Students entering the Faculty for the first time are required to make an appointment with a Faculty Adviser to be held during the two week period prior to registration, and should call 392-5854 after receiving their letter of admission to the Faculty to arrange their appointment.

Students continuing in the B.Com. program will complete a Study Plan Form, using the concentration requirements as listed in the Calendar as a guide to their course selection, calling upon their Group Adviser or other faculty members for advice where appropriate. This course planning generally takes place during the last two weeks of April; students will then be sectioned, ensuring them of a place in all courses with limited enrollment. The Study Plan Form must be signed by one of the Advisers, Mrs. Helen Van Eyk or Mrs. Wendy Frank.

Students intending to continue in an Honours or Major program must have this Study Plan Form also authorized by the Departmental Adviser concerned.

Students continuing in the part-time (evening) program will have their Study Plan Form authorized by the Senior Program Adviser, Mrs. Helen Van Eyk.

Students wishing general information about the program, or encountering difficulties (academic or personal) during the session, should contact Mrs. Helen Van Eyk.

REGISTRATION

1. **COURSE APPROVAL.** All undergraduate students, whether in the full- or part-time B.Com. program, are required to complete a Study Plan Form before registration. This must be signed by one of the Advisers, Mrs. Helen Van Eyk or Mrs. Wendy Frank, in the case of Majors and/or Honours by the department adviser as well, and this signed form presented at registration. NO STUDENT WILL BE PERMITTED TO REGISTER WITHOUT AN APPROVED STUDY PLAN FORM.

2. **REGISTRATION.** All students must register during the normal registration period as indicated in the Calendar of Dates of the University.

3. **LATE REGISTRATION.** Students who fail to register during the normal registration period may do so later on the date designated by the University for late registration upon payment of a late registration fee of $50.00.

4. **CHANGE OF COURSE.** Students who wish to change the courses for which they are registered within the change of course period must apply to one of the Advisers from the B.Com. office. Permission may be granted provided that such changes do not involve conflicts in timetable nor destroy the sequence of courses. Course cards must be obtained from the Student Affairs Office.

5. **WITHDRAWALS.** Students wishing to withdraw from a course after the change of course deadline must obtain permission of one of the Advisers from the B.Com. office. A "W" will be indicated on the transcript, if withdrawal takes place before October 8, 1982 for A courses and January 21, 1983 for B courses and November 19, 1982 for D courses, but will not be counted in the GPA.

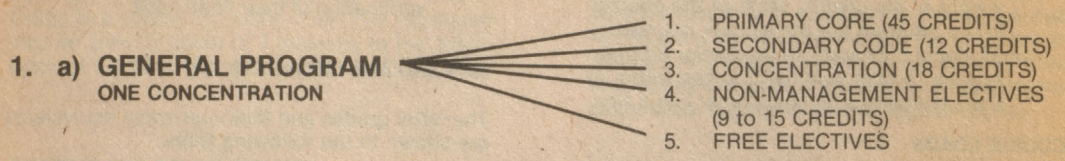
   Approval to withdraw after this deadline will be granted only in exceptional circumstances.

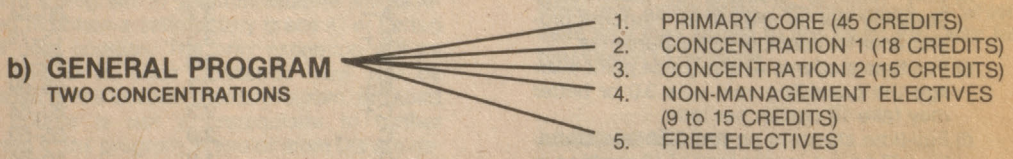
   Students whose circumstances require them to withdraw from their complete program should report to the Student Affairs Office.

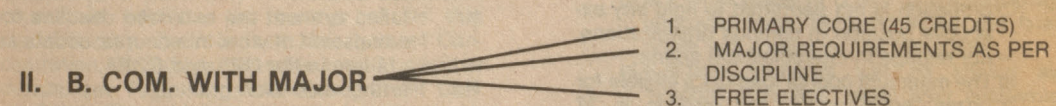
   Tuition fees for the term in which the student withdraws are refundable according to the regulations set out in the *General Announcement.*

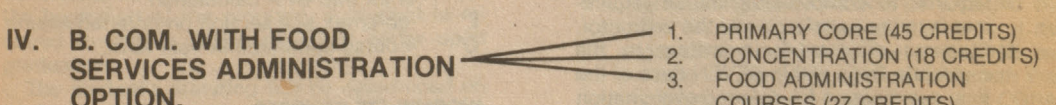
6. **VERIFICATION OF PROGRAM.** Each student is responsible for registering in the proper courses and programs. Verification forms will be available to the student in October and February (exact dates will be announced during the change of course periods.) It is the student's responsibility to check the verification form for errors and return it, signed, to the Student Affairs Office. Students who expect to graduate in January or June of the current academic year or November of the following academic year should check the expected date of graduation on the form. It is the responsibility of the student to ensure that the he or she has met all Departmental and Faculty requirements to graduate.

8 CURRICULUM FOR THE BACHELOR OF COMMERCE PROGRAM









GENERAL INFORMATION

CREDITS

a) In general, a course lasting one term (13 weeks) with three hours of lectures per week (and laboratory periods and conferences, where appropriate) will carry a weight of three credits. Similarly, a three-hours-a-week course lasting through both the Fall and Winter (26 weeks) will carry a weight of six credits. Most of the courses in the program are three-credit courses.
b) Students may apply to the Senior Program Adviser to take summer courses, either at this University or at some other institution.

COURSE LOADS

a) A full-time student in satisfactory standing will normally have a course load of 15 credits per term.
b) Only full-time students in Satisfactory Standing will be eligible for Honours programs or be considered for Bursaries.
c) Full-time students whose grade point average the preceding year was 3.0 or better may take 18 credits per term.
d) Full-time students on probationary standing will have a course load of 12 credits per term, and may add to this a repeated course in which a grade of D or F was obtained at the first attempt. A student on probation is not permitted to hold any executive position in campus organizations, nor engage in intercollegiate sports.
e) The minimum course load to be eligible for prizes, scholarships and awards is 27 credits taken during the preceding Fall and Winter Terms.

EXAMINATIONS

a) Students may write examinations in English or French.
b) Supplemental examinations are no longer offered in day-time undergraduate courses administered by the Faculty of Management. A student wishing to up-grade standing in a course may repeat the course in a subsequent term, and will be required to complete all course requirements to the satisfaction of the instructor.
c) Students may apply in writing to the Associate Dean within SEVEN days of the final examination for deferred examination privileges.

VERIFICATION OF GRADES AND RE-READS

a) Papers are marked and grades calculated and handled with considerable care. However, in a case where a student feels that an error has been made in arriving at the final grade, a Verification of Grade Application must be completed in the Student Affairs Office, requesting the instructor to carry out a detail check that all questions have been marked, and that the final grade has correctly been computed on the basis of the term work, final examination, etc.
b) The student may apply for a Re-read for a formal final examination (held during the final Examination period), but not for a class test, term paper, project, etc. Re-reads for computer-scored examinations cannot be made, but students may request verification of their final grade.

GRADING AND CREDIT SYSTEM

The letter grades and their numerical equivalents are shown in the following table:

Letter Grades	Grade Points	Numerical Marks
A	4.0	85–100
A–	3.7	80–84
B+	3.3	75–79
B	3.0	70–74
B+	2.7	65–69
C+	2.3	60–64
C	2.0	55–59
D	1.0	50–54
F(Fail)	0	0–49

K -incomplete; see incomplete courses section below.
KF -failed to meet the extended deadline for submission of work in a course; counts as a failure in the GPA and CGPA.
K* -further extension granted.
J -absent; the student is registered for a course but does not write the examination or do other required work. The J will be calculated as a failure in the GPA and CGPA.
W -withdrew; a course dropped, with permission after the change of course period before the withdraw deadline. Does not enter into the GPA calculation.
WF -withdrew failing; a course dropped, with special permision after Faculty deadline for Withdrawal from Course. Does not enter into GPA calculation.
L -deferred; see section on deferred exams.
Q -course continued in next term.

INCOMPLETE COURSES

If, in the instructor's opinion, there is sufficient reason to permit a delay in the submission of required term work, an extension of deadline of up to four months after the end of the course may be granted. In this case, the instructor will submit a grade of "K" (incomplete). If a new grade is submitted within the deadline by the instructor, this will appear on the student's Faculty reports and verification forms following the K and will replace the K on the student's official transcript.

If the required work is not completed before the deadline, the grade KF will be recorded. (KF denotes a failed course and has the same effect on the GPA as an F).

In exceptional circumstances, and with the approval of the Associate Dean, the four month deadline may be extended further, in which case the grade of "K*" will appear.

Students who have not, without accepted reason, participated or written the final examination in a course for which they have registered may be given a grade of J (absent). In the calculation of the GPA, this is treated as an F.

GRADING AND CREDIT SYSTEM

A grade of C or better is required for all courses which are prerequisite to further courses in the student's program. In addition, student will be required to obtain a satisfactory grade (C or better) in all core courses. The only exception will be that one D in each academic year will be tolerated in the student's core program, provided that course is not a prerequisite to further courses in the program. If two or more D's are obtained in core courses, the excess over the single allowable D must be improved. A failure carries no credit towards the degree. A grade of D is considered a pass only when it is a terminal course. In addition, the number of Ds that students may obtain in their Management Concentration Group(s) is limted to one. For further details, see Page 18, under Management Concentration Group.

GRADE POINT AVERAGE

A grade point average (a weighted average of the ratings obtained in all courses taken during the preceding session, with the number of credits per course serving as the weight for the course) will be computed in May of each year.

The cumulative grade point average (CGPA) will include all courses taken by the student from the beginning of the program. A student is required to have a CGPA of 2.0 or better upon graduation.

The student's standing will be determined on the basis of the annual grade point average (GPA) as follows:

Satisfactory standing - 2.0 or better

Probationary standing - 1.5 - 1.99 for U2-U3 students; 1.2-1.99 or U1 students.

Unsatisfactory standing - less than 1.5 for U2-U3 students; less than 1.2 for U1 students. This includes students who have failed to improve their probationary standing after one term.

The cumulative grade point average (CGPA) will include all courses taken by the student from the beginning of the program.

PROBATIONARY STANDING

A student on probationary standing registers for a maximum of 12 credits of new course material per term, and must achieve by the end of that year either a CGPA of 2.0 or better, or a GPA for that year of 2.5 or better. Otherwise the student's standing becomes unsatisfactory. In addition the standing of a student on probation in the Fall term courses is assessed in January; a student who has not shown adequate improvement may be required to withdraw from the program in January. A student on probation is not permitted to hold any executive positions in campus organizations, nor engage in inter-collegiate sports.

UNSATISFACTORY STANDING

Students whose standing is unsatisfactory will be required to withdraw from the Faculty unless there are extenuating circumstances, in which case they may appeal to the Associate Dean for permission to continue.

ACADEMIC RECORD

a) The student's transcript will include a listing of the courses taken and the letter grades obtained.
b) If a letter grade of D or F is subsequently improved upon, both the initial and final grade will appear on the transcript.
c) Full-time students will be known as "Faculty Scholars" when their academic performance is outstanding. The designation, while carrying no monetary reward, is an official recognition of the students' achievements and will be noted on the students' transcripts.
d) Students in a Major or General program who graduate with a CGPA of 3.50 or better will be awarded their degrees with "Great Distinction"; those with a CGPA between 3.30 and 3.49 will receive their degrees with "Distinction".
e) The University Scholar designation for graduating students will be awarded by the Faculty to a maximum of 10% of its graduating students. The award will be made on the basis of the CGPA, with the minimum standard being set at a CGPA not lower than a 3.50.

SUMMER SESSION

Each summer, from early May to mid-August, most Primary and Secondary Core courses and several elective courses are offered by the Faculty of Management for full credit. They are available to Management students, and to students from other faculties and universities with the necessary course prerequisites. In addi-

tion, the University offers a number of courses in various disciplines at different levels during the summer. Information on Management Summer courses is available from the Office of the Associate Dean or from the Summer Session Office, F. Cyril James Building.

Students working full- or part-time during the Summer will be allowed to take at most one course in each of the two Summer Session periods; students who are not working and wish to follow a full-time period of study will be permitted to enrol for more than six credits per period only with special permission of the Associate Dean or the Senior Program Adviser, but will in no circumstance be allowed to take more than twelve credits in either period of the Summer Session, and may take no more than eighteen credits in a single summer.

FRENCH LANGUAGE EXCHANGE PROGRAM

An exchange program exists between McGill's Faculty of Management and the École des Hautes Études Commerciales permitting a limited number of students at each Institution to attend the other Institution on a full-time basis for one winter term. McGill B.Com. students should, of course, have a good working knowledge of French and be prepared for total immersion in that language. To be eligible, students must be in good standing, must have completed at least half of the program and ideally should be in their 4th term.

Further information can be obtained from Mrs. Helen Van Eyk, Senior Program Adviser.

LANGUAGE POLICY

The language of instruction at McGill is English. Students may, if they wish, write term papers and answers to examinations in French, but competence in English is essential to success at the University. It is recommended that students who lack fluency in English take a course in English as a second language at McGill's Summer Session or elsewhere before embarking on a university program of studies.

FRENCH LANGUAGE IMPROVEMENT

The attention of students is drawn to the critical importance of competence in both written and oral French for graduates of the Faculty of Management. A wide variety of courses and programs is offered through several units of the University including the Centre for French and English as Second Languages, the Centre for Continuing Education, the French Summer School and the Department of French Language and Literature. Many of these involve placement tests which are offered in April and December through the Department of French Language and Literature. More detailed information on these resources may be obtained from Mrs. Helen Van Eyk, Senior Program Adviser.

PLAGIARISM

The attempt of any students to present as their own, work of another or any work which they have not honestly performed, or to pass any examination by improper means, is regarded by the University as a most serious offence and renders the offenders liable to disciplinary action. If students have any doubt as to what might be considered "plagiarism" in preparing an essay or term paper, they should consult the instructor of the course to obtain appropriate guidelines.

Students found guilty of examination cheating, plagiarism, etc will be subject to a range of possible disciplinary actions by the Faculty, ranging from automatic failure in the course involved to permanent suspension from the University, depending on the circumstances. The matter will be recorded and kept in the student's official file.

SPECIAL FACILITIES

Students with visual or other disabilities should consult the Office of the Associate Dean about the possibility of special examination facilities.

LANGUAGE REQUIREMENT FOR PROFESSIONS

Québec law now requires that candidates seeking admission to provincially-recognized Québec professional corporations* must possess a working knowledge of the French language, i.e. be able to communicate verbally and in writing in that language.

To demonstrate this capability, candidates will be required to pass an examination set by the Office de la langue française, unless they can show that three years of instruction in a French post-primary school have been completed. The professional corporation will require this proof of attendance or of successful completion of the Office examination.

This examination shall test the candidate's mastery of oral and written comprehension and expression in French. The contents may vary in accordance with the current terminological requirements of the profession or professional group.

Examinations take place as frequently as the demand indicates and may be attempted an unlimited number of times although a waiting period of 90 days is required between attempts.

The examination may be attempted by registered students during the two years prior to the date they receive a degree giving access to a professional corporation. Arrangements for sitting the exam while still a student must be made through the faculty office. Priority will be given to those closest to graduation.

More information may be obtained from the Office de la langue française, Tour de la Bourse (Place Victoria), 15e étage, Montréal, Québec H4Z 1G8, Telephone 873-8361.

Students who need to acquire a functional level of proficiency in French may register in courses at either the Centre for French and English as Second Languages, 3438 McTavish Street, Telephone 392-5727, for courses during the day, or at the Centre for Continuing Education, 3461 McTavish Street, Telephone 392-4901, for courses in the evening.

Students already proficient in French but who wish to keep up practice may register in courses at the Department of French Language and Literature, 3460 McTavish Street, Telephone 392-4577, or at the Centre d'études canadiennes-françaises, 3475 Peel Street, Telephone 392-5200.

* McGill degrees and diplomas currently give access to corporations regulating the activities of the following professional groups:

Advocates
Agrologists
Architects
Chartered Accountants
Chartered Administrators
Chartered Appraisers
Chemists
Dentists
Dietitians
Engineers
Industrial Administration Accountants
Industrial Relations Counsellors
Licensed General Accountants
Notaries
Nurses
Occupational Therapists
Physicians
Physiotherapists
Psychologists
Social Workers
Speech Therapists & Audiologists
Urbanists
Vocational Guidance Counsellors

PROFESSIONAL ACCOUNTING DIPLOMAS
(C.A., C.G.A., R.I.A)

McGill B.Com. graduates who wish to qualify for a professional accounting diploma are required to register with the respective Order, or Corporation, to follow a specified program of studies which is available through the McGill Centre for Continuing Education, and to write a final professional examination. Related work experience under the control of the Order or Corporation is also required.

For further information, students should consult the Centre for Continuing Education, Strathcona Hall, 772 Sherbrooke Street West, and the Association of their choice. Their offices are located as follows:

The Order of Chartered Accountants of Québec,
680 Sherbrooke West, 7th Floor,
Montreal H3A 2S3
Telephone: 288-3256

Corporation of Industrial Accountants of Québec,
1509 Sherbrooke Street West, Suite 15,
Montreal H3G 1L7
Telephone: 932-7144

The Corporation of Certified General Accountants,
5165 Queen Mary Rd., Suite 512,
Montreal H3W 1X9
Telephone: 861-1823

GRADUATE DIPLOMA IN PUBLIC ACCOUNTANCY CHARTERED ACCOUNTANCY PROGRAM

McGill University Graduates may apply for credit toward the Qualifying Program for the Graduate Diploma in Public Accountancy which is one of the requirements for membership in the Order of Chartered Accountants of Québec (C.A.).

The equivalence between some of the C.A. courses and corresponding McGill B.Com. courses is given below. In general, a grade of at least C is required in the corresponding B.Com. course to earn exemption from the C.A. requirement, but courses marked * require a grade of at least B in the B.Com. course to earn exemption in the C.A. program.

C.A. Courses	*B.COM*
Financial Accounting I*	280-211
Financial Accounting II*	271-312
Financial Accounting III*	271-414
Managerial Accounting I*	271-313
Auditing I*	271-413
Taxation I*	271-412
Finance I*	280-341
Data Processing & Computers*	273-332
Survey of Basic Mathematics	189-224
Basic Management Statistics	280-272
Economic Environment of the Firm	154-200
Economic Analysis of Business	280-393
Law I	278-384
Management Policy	276-463 *or* 280-323
Managerial Accounting II*	271-415

R.I.A. COURSES

The Accounting student who intends to complete the R.I.A. Certificate Program will find the following information on course equivalence of interest:

R.I.A. Courses	*B.COM*
Principles of Accounting	271-311 and 280-211
Accounting Theory	271-312
Cost & Management Accounting	271-313
Advanced Management Accounting	271-415
Selected Topics in Accounting	271-414

Economics	154-200
Communications & Case Analysis	B.Com. degree
Organizational Behavior	280-222
Commercial Law	278-384
Taxation	271-412
Financial Management	280-341
Operational Auditing	(partial credit) 271-413
Data Processing	280-331
Information Systems	273-332
Business Mathematics	B.Com. degree
Quantitative Methods I	280-271
Quantitative Methods II	277-472 and 280-272
Management: Processes & Problems	280-323 and 271-416

C.G.A. COURSES

The Accounting student who intends to complete the C.G.A. Program will find the following information on course equivalence of interest:

C.G.A. Courses	*B.COM.*
Accounting Principles	280-211
Law	278-384 and 278-388
Managerial Mathematics	B.Com. degree
Statistics	280-271 and 280-272
Financial Accounting	271-311 and 271-312
Economics	154-200
Cost Accounting	271-415 and 271-313
Information & Computer Systems	280-331
Advanced Accounting	271-312
Income Tax	271-412
Auditing Procedures	271-413
Organizational Behavior	280-222
Financial Comptrollership	280-341
Auditing *or* Managerial Auditing	271-413 (offer partial credit only)

CURRICULUM FOR THE B. COM. — GENERAL PROGRAM

The student who has been admitted to a 90 credit program will follow the curriculum set out below. A student wishing to depart from this program must obtain written permission from the Associate Dean. The FIVE components of the program are:

PRIMARY CORE

A total of 45 credits is taken in common by all students in the program. This involves 33 credits offered by the Faculty, and 12 credits offered by other Departments. Courses normally taken in the first year (U1) are 280-211 Accounting I, 280-221 Social Psychology, 280-222 Organizational Behaviour, 280-271 Statistics I and 280-272 Statistics II, 189-224 Applied Matrix Algebra (Mathematics Department), 154-200 Economic Analysis and Application (Economics Department), 425-201 Effective Written Communication (Faculty of Education). Courses normally taken in the second year (U2) are 280-331 Management Information Systems, 280-341 Finance I, 280-352 Marketing Management I, 280-373 Operations Research, 280-393 Managerial Economics. Course required in third year (U3) is 280-323 Organizational Policy.

SECONDARY CORE

Students are required to complete 12 credits from the following courses which comprise the Secondary Core:

271-213 Accounting II (not to be taken by students in Accounting Concentration), 273-332 Computer Based Information Systems, 274-343 Managerial Finance (not to be taken by students in Finance Concentration), 275-354 Marketing Management II, 276-463 Corporate Policy, 276-565 Business in Society I, 277-472 Production Management, 278-382 International Business, 278-384 Business Law I, 278-386 Communication Skills in Management, 278-388 Business Law II, 279-294 Introduction to Labour-Management Relations.

Students who complete Joint Concentration are exempted from the Secondary Core requirements. Students should be particularly careful in choosing Secondary Core courses in their program, since a decision in the final year to complete Joint Concentrations may result in the student being required to complete more than the usual 90 credits for the degree, as where the Secondary Core course chosen does not belong to either Concentration.

Note: A given course cannot be counted toward the fulfillment of both Secondary Core and a Management Concentration.

MANAGEMENT CONCENTRATION GROUP

Accounting
Entrepreneurship
Finance
International Business
Labour-Management Relations
Management Information Systems
Management Policy
Management Science
Marketing
Organizational Behaviour and Personnel
Public Sector Management
Urban Analysis and Real Estate

Each student will elect a total of 18 credits chosen from one of the twelve Management Concentration Groups listed below. The elective courses from the Group, together with the breadth provided by the Cores, should enable the student to develop some depth in one particular area in Management. To be considered to have completed a Management Concentration Group, the student must earn at least 15 credits with satisfactory grades (C or better) in the Concentration requirement; generally this allows a max-

imum of one grade of D in the Concentration requirements. The student who has failed to earn 15 satisfactory credits will be required to embark on a new Concentration, repeat the course(s) in question or where possible to replace this course with a satisfactory option from the Group requirements. A statement will appear on the student's transcript indicating the Concentration completed.

JOINT CONCENTRATION GROUPS

The student wishing to complete a second Management Concentration will be required to complete at least fifteen non-overlapping credits at a satisfactory level. Such students will be waived the Secondary Core requirements. A statement will appear on the student's transcript indicating the Concentrations completed.

NON-MANAGEMENT ELECTIVES

Each student is required to complete a certain amount of course material outside the Faculty of Management. The number of credits required is determined by the student's pre-university background.

1. A student with a non-commerce background at CEGEP will be required to take 9 credits outside the Faculty of Management.
2. A student with a commerce background at CEGEP will be required to take 15 credits outside the Faculty of Management.
3. A student entering a 120 credit program will be required to take at least 21 credits outside the Faculty of Management.

Students may register for any courses offered in the University outside the Faculty of Management, for which they have the required prerequisites. Courses from professional faculties (eg. Engineering, Education) require special permission.

UNRESTRICTED ELECTIVES

The remainder of the student's program, usually a total of 6 credits, will be chosen from the complete range of University course offerings, to complete the number of credits needed for the degree.

EXEMPTIONS

Students who complete core course material with sufficiently high standing before entering the three-year program will, if the courses are judged by the Faculty to be the equivalent of core courses, be granted exemption from the corresponding Primary Core course. Students may replace the exempted course with any elective or higher level course offered in the Faculty for which they have the necessary prerequisites. It must be emphasized, however, that while the exemption absolves students from the need to repeat the course material, they receive no reduction in the number of credits needed for the degree.

Detailed information concerning exemption criteria is available from the Senior Program Adviser.

PART-TIME B.COM. PROGRAM

Students taking less than four courses per term are considered to be part-time students. Such students generally follow their program through evening courses offered by the Centre for Continuing Education. Since the range of Management and non-Management course offerings in an evening program is more restricted than in the day program, the program requirements for such students differ somewhat from the general program outlined above. In particular, it is not possible to complete Honours nor Major programs, and not all Concentrations may be followed. Further information on program requirements for students who change from the full- to the part-time program, or vice versa, can be obtained from the Senior Program Adviser, Mrs. Helen Van Eyk.

HONOURS PROGRAMS

HONOURS IN ECONOMICS

Advisers: Professors Asimakopulos, Weldon

An Honours program is available in Economics, as well as a Joint Honours program in Economics and Accounting. The difference between the Honours and Major programs in Economics is not one of quantity but rather of quality, the Honours program involving study in greater depth.

Students must register with the Economics Department for this Honours program. This will usually be done at the beginning of their U1 year, but special arrangements may be made for students wishing to enter the program at the beginning of their U2 year. Students will normally be required to take a minimum of seven approved courses in Economics (42 credits). These would include 154-250D, 154-352D, 154-357D, 154-450D, 154-460D. All Honours students in Economics are exempt from 280-393 Managerial Economics. 280-271 and 280-272 Statistics I and Statistics II may be replaced by 154-357D Economic Statistics.

JOINT HONOURS IN ECONOMICS AND ACCOUNTING

Advisers: Professors Asimakopulos, Weldon

The Joint Honours program in Economics and Accounting will normally include the five courses listed for Honours Economics, but only one additional course for a total of 36 credits will be required. In addition, the student will complete an 18 credit concentration in Accounting as defined in the Accounting Concentration. A grade of B or better is required in all Economics and Accounting courses to earn the Honours designation.

JOINT HONOURS IN ECONOMICS AND FINANCE
Adviser: Professor Losq

This program is designed to take advantage of both McGill's Finance and Economics course offerings to produce a student who is well trained in these two complementary areas, and thus particularly attractive in the job market in Finance, Economics or Financial Economics posts in both industry and government. The program is a demanding one and its potential rewards are correspondingly high.

The Joint Honours program in Economics and Finance involves the following: 30 credits in Economics, 21 credits in Finance, 30 credits of Primary Core of the B.Com. Program, and the 9 remaining credits as free electives, chosen from the offerings of all Faculties of the University. A grade of B or better is required for all Economics and Finance courses. Students will be required to write a short thesis in the Advanced Finance Seminar.

Of the 30 credits in Economics, the required courses are 154-250D, -352D, -357D, and -450D and the remaining 6 credits as free Honours Economics electives chosen in consultation with the Economics Honours Adviser.

Of the 21 credits in Finance, the required courses are 271-311, -312, 274-342, -441, -443, and -647, while the remaining 3 credits are to be selected from 271-412, 274-442, -444, 278-482 and -495.

The Primary Core requirements are: 280-211, -221, -222, -323, -331, -341, -352, -373, 189-224, and 425-201. Note that this implies that the following changes have been made in the regular B. Com Primary Core: Economics 154-357D substitutes for 280-271 and 280-272; neither Economics 154-200D nor 280-393 is required. The student who takes 154-200D in first year, and subsequently enters this joint honours program will count this course toward the 12 free elective credits in this program.

MAJOR PROGRAMS

Major programs are at present available in Economics, Labour-Management Relations, Management Information Systems, Mathematics and Psychology. Although the requirements for these programs vary from one discipline to another, they all require a student to complete 45 credits of Primary Core in this Faculty and the remainder of their program conforming to the requirements of the relevant department.

Because of the heavier demands of Major programs, students desiring to pursue a program of this type must declare their intention no later than the beginning of the program. Students are then assigned to an adviser from the appropriate department and a suitable program is worked out.

Only satisfactory grades (C or better) may count towards the Major requirements.

MAJOR IN ECONOMICS

Adviser: Professor Grantham

The Major Program in Economics will involve a total of 30 credits, including Economics 154-200D, -300A, -310B, as well as least 18 credits from other -200, -300 and -400 level courses in Economics. All Major students in Economics will be exempted from the Core course Managerial Economics (280-393).

Statistics I and II (280-271, 280-272) may be replaced by 154-317D Economic Statistics in the U1 year, and bring the total of Economics credits in the Major program to 36. For further information, please contact the Economics Department.

MAJOR IN LABOUR-MANAGEMENT RELATIONS
Adviser: Professor Goldenberg

Labour-management relations is a "growth industry" with increasing opportunity for labour relations specialists in corporations, government organizations and unions. The human resources factor, of which labour relations is a vital part, is recognized as key to efficiency and productivity of an enterprise.

In addition to giving students a solid grounding in various aspects of Labour Economics and Labour Relations, this program provides understanding of federal and provincial labour legislation, training in collective bargaining, the administration of trade union contracts, handling of grievances and preparation for participation in arbitration proceedings.

The following courses constitute a compulsory core in industrial Relations.

279-294	Introduction to Labour-Management Relations
279-394	Collective Bargaining
279-491	Labour-Management Relations in Practice (6 credits)
279-492	Public Policy in Industrial Relations
279-494	Labour Law
279-495	Labour Relations in the Public Sector
279-501	Human Resources in Industrial Society
154-306	Labour Economics and Institutions (6 credits)

At least six additional credits must be selected in consultation with the Major Adviser, from among the following courses.

272-423	Personnel Administration
272-425	Compensation Management
278-489	Independent Studies in Management
279-393	Labour Relations in Québec

279-500	Labour and Industrial Relations Theory
279-502	Labour Unions and Collective Bargaining Research
154-426	Labour Economics (6 credits)
166-312	Industrial Sociology

MAJOR IN MANAGEMENT INFORMATION SYSTEMS
Adviser: Professor Howson

The Major in Management Information Systems enables the student to concentrate on computer-based information systems courses within the framework of the Management program. The Computers and Systems Group of the Faculty of Management provides the student with the knowledge of systems analysis and design, and control and management of the computer resource. The School of Computer Science enhances the program by providing the student with the more technical and theoretical aspects of computer systems. Reflecting the many facets of the impact of computer technology, the program also provides flexibility to encourage students to take electives in other departments, from Psychology to Electrical Engineering, that focus on particular aspects of computers and information systems of interest to the student.

All students who wish to major in Management Information Systems must register with the Major adviser.

The basic requirements of the Major are as follows:

1. Primary Core (45 credits)

(Note: This includes two courses which are part of the Major program, Management Information Systems (280-331) and Accounting I (280-211). These should be taken in U1.

2. Required Major Courses from Faculty of Management (12 credits)

(a)	273-332	Computer-Based Information Systems
(b)	273-333	Systems Analysis & Modelling
(c)	273-431	Information Systems Design
(d)	273-432	Information Systems Administration

3. Required Major Courses from School of Computer Science

(a)	308-210	Computer Structure & Assembly Language
(b)	308-230	Computers in Data Processing
	or	
	273-334	Business Programming Development
(c)	308-315	Information Structures

4. Optional Courses (9 credits)

Optional courses selected, subject to the approval of the Major Adviser, from the Computers and Systems Group of the Faculty of Management, School of Computer Science course offerings or relevant options in other disciplines (such as Electrical Engineering, Psychology, Sociology, etc.)

5. Unrestricted Electives (15 credits)

The unrestricted electives may be any courses within or outside the Faculty of Management.

MAJOR IN MATHEMATICS
Adviser: Professor N. Sancho

The Major Program in Mathematics involves a program of 54 credits including 48 credits in Mathematics. Compulsory courses are 189-120, -121, -221, -222, -245. 36 credits will be selected from the following: 189-217, -218, -242, -243, -246, -314, -315, -316, -317, -318, -319, -323, -324, -327, -328, -333, -343, -346, -348, -349, -360, -396, -407, -414, -415, -416, -417, -419, -423, -424, -425, -427, -447. The various areas of emphasis within the program are Probability and Statistics, Applied Mathematics, Computer Science, and Actuarial Science. Such students will complete the Primary Core program, but will replace Statistics I and II by courses 189-323 and -324 and Applied Matrix Algebra by 189-245.

MAJOR IN PSYCHOLOGY
Adviser: Professor B. Sheppard

The Major Program in Psychology involves a 54-credit course sequence involving 33 credits taken in Psychology, one course in Sociology, and seven courses taken in the Faculty of Management. Some of the Management courses are in fact part of the Primary Core, and the remaining Management courses are chosen from a designated list of the Faculty's elective offerings.

Required Psychology courses in U1 are: 204-300, -301, -305, -330 (or 280-221). Courses in U2 are: 204-331 plus 9 credits from: 204-302, -303, -309, -310, -332, -335, -336, -433. Courses in U3 are: 204-411 plus 6 credits from 204-307, -400, -401, -403, -404, -405, -406, -450.

OPTION IN FOOD SERVICES ADMINISTRATION

This option has been designed to provide the specialized knowledge needed for a career in the Hospitality Industry. There is a body of administration and operational management concepts and principles that is common to the function of management in any industry. The challenge of a specialized option is to develop in students the perspective, flexibility and creativity that will enable them to meet the vocational aspects of

the specialization as well as providing the knowLedge and ability to function in the constantly changing environment of management problems and decisions inherent in a complex multi-segmented growing industry. The option has been designed to integrate the general managerial principles and concepts and the specific hospitality applications of these principles and concepts into a core of knowledge that will permit graduates to be creatively employed with the greatest possible advantage to themselves to the community in which they live, and in the industry in which they work. Students must have completed a course in Organic Chemistry at the CEGEP level before beginning this option. Students follow the program as set out below:

Primary Core

as in present B. Com. program
done in U1 and U3 at McGill campus.
(total 45 credits)

Management Concentration Group

complete requirements of any of the 12 Groups done in U1 and U3 at McGill campus.
(total 18 credits)

Non-Management & Unrestricted Electives

complete 8 required & 1 elective 3 credit course below done in U2 on the Macdonald Campus

Required

TERM I

362-442A	Food Microbiology and Sanitation * (or 362-230B Microbial World)
376-214A	Food Fundamentals I
377-490D	Food and Consumer Sciences Project I
380-242A	Management Theories and Practices
380-345D	Food Services Systems Management

TERM II

362-230B	Microbial World*
376-217B	Food Fundamentals II
382-212B	Basic Nutrition Electives

Electives (choose 1)

334-230B	Economics of Marketing
368-301A	Psychology
370-342B	Social Processes and Social Institutions
370-350A	Research Methods for Social Surveys
376-413B	Product Development
377-420D	Directed Studies in Food Sciences
380-446B	Personnel Management
384-422A	Instructional Communications I

MANAGEMENT CONCENTRATION GROUPS

ACCOUNTING
ENTREPRENEURSHIP
FINANCE
INTERNATIONAL BUSINESS
LABOUR-MANAGEMENT RELATIONS
MANAGEMENT INFORMATION SYSTEMS
MANAGEMENT POLICY
MANAGEMENT SCIENCE
MARKETING
ORGANIZATIONAL BEHAVIOUR AND PERSONNEL
PUBLIC SECTOR MANAGEMENT
URBAN ANALYSIS AND REAL ESTATE

Each of the Management Concentration Groups offered has a minimum of 18 credits to be taken from the Group. The student will note that a considerable degree of choice is present within each Group.

In general, the student will begin taking courses from the chosen Concentration in the U2 year. Care should be emphasized in the selection of Secondary Core courses, since a decision in the final year to complete two Concentration Groups may require a student to complete more than the usual 90 credits for the degree.

An adviser is appointed each year for each Management Concentration Group to assist students in the general question of choosing a Group, and to provide students with additional information for intelligent course selection. See ACADEMIC COUNSELLING.

ACCOUNTING CONCENTRATION

Adviser: Professor Marshall

The Accounting Concentration prepares students for careers in the accounting profession, in industry, and in government. The Concentration, which provides expertise in financial accounting, management accounting, taxation, systems, and auditing, gives students a unique opportunity to develop professional skills along with the generalist skills provided by the B.Com. program. The great demand of Accounting graduates by C.A. firms, manufacturing firms and the government is unequivocal evidence of the value of these skills.

The requirements of the Accounting Concentration are at least 18 credits subject to the following requirements: the student must take the 3 courses in Category A, one course from Category B and at least 2 courses from Category C. For students completing Accounting as one of two Joint Concentrations, they have the option of completing 18 credits in one concentration and only 15 credits in Accounting, the requirements from Category A and B remain as indicated above, while only one course will be required for

Category C. Satisfactory standing in at least 15 credits is required to be considered to have completed the Accounting Concentration requirements.

All those concentrating in Accounting (including those taking an accounting concentration instead of the secondary core) must obtain a grade of C or better in each course in Category A. No student will be permitted to register in 271-312, without already having earned a grade of at least C in 271-311. Before taking any of the courses in Category B or C, the pre-requisite course indicated must already have been completed with a grade of at least C.

CATEGORY A:

271-311	Financial Accounting I
271-312	Financial Accounting II
271-313	Managerial Accounting I

CATEGORY B:

271-411	Accounting Theory
271-416	Management Accounting III

CATEGORY C:

271-411	Accounting Theory*
271-412	Business taxation
271-413	Systems & Auditing
271-414	Financial Accounting III
271-415	Management Accounting II
271-416	Management Accounting III*
271-511	Seminar in Financial Accounting
273-332	Computer Based Information Systems
273-432	Information Systems Administration

* If not taken as part of Category B

Student wishing further information on Programs in Accounting such as the C.A., R.I.A., and C.G.A. are referred to the section PROFESSIONAL ACCOUNTING DIPLOMAS.

ENTREPRENEURSHIP CONCENTRATION

Adviser: Professor Ellis

This Concentration is concerned with the genesis and development of entrepreneurial activities. It deals with the integration of marketing, finance, organization and policy in the development and expansion of business enterprise. Included are evaluation of new business ventures, the role of acquisitions, and the strategic issues and operating problems at various stages of a firm's existence from its beginnings to maturity.

The student completes all three courses in Category A and three courses from Category B.

CATEGORY A:

271-213	Accounting II
	or
271-313	Management Accounting I
274-343	Managerial Finance
276-464	Management of Small Enterprises

CATEGORY B:

271-417	Taxation and Business Decisions
272-521	Leadership Style and Organizational Stress
275-354	Marketing Management II
275-452	Consumer Behaviour
275-453	Advertising Management
276-562	Seminar in Organizational Strategy
277-472	Production Management
278-382	Introduction to International Business
278-384	Business Law I
278-485	Real Estate Finance

FINANCE CONCENTRATION

Advisers: Professors Eger, Fewings, Fowler, Losq, Sealey

The Finance Concentration has been designed to meet the increasing demand for expertise in this important and rapidly growing functional area of business. The Finance function requires familiarity with accounting, taxation, financial theory, financial institutions, investment analysis, risk management, and applied technique. Our graduates find a strong demand for their expertise among financial organizations, governments, and non-financial firms where they pursue careers which lead to positions such as Comptroller, Treasurer and V.P. Finance.

Students completing the Finance Concentration, are strongly recommended to satisfy the Secondary Core requirements by taking:

273-332	Computer Based Information Systems
274-342	Finance II
278-384	Business Law I

It is preferred that students take 278-388, Business Law II as a fourth course; however they may choose the 3 credits from any Secondary Core course.

Students completing only one Concentration should choose their courses as follows:

CATEGORY B	6 credits
CATEGORY C	6 credits
CATEGORY D	6 credits

Students completing the Finance Concentration with a Joint Concentration *other than Accounting* may choose courses according to the following:

CATEGORY A	3 credits
CATEGORY B	6 credits
CATEGORY C	3 credits
CATEGORY D	6 credits

Students completing the Finance Concentration jointly with an *Accounting* Concentration may choose courses as follows:

CATEGORY A	3 credits
CATEGORY B	6 credits
CATEGORY C	9 credits

NOTE: Students selecting courses with a possible Finance Concentration in mind are advised to pay careful attention to prerequisites courses and their timing to insure flexibility. In particular, the courses in CATEGORY D are recommended for the U2 year. It should be noted that 274-342, 274-441 and 274-443 must all be completed with a grade of C or better; the remaining nine credits of Concentration requirements may include a maximum of three credits with a grade of D.

MANAGERIAL FINANCE (274-343) should only be taken by students not intending to complete the Finance Group requirements, since its contents are duplicated in several of the required Finance Group courses. A student who completes 274-343 and then wishes to enter the Finance Concentration will be required to also complete 274-342 but will not receive credit for both courses.

Students completing Managerial Finance may elect to take finance courses which do not require Finance II prerequisites as part of other concentrations such as Urban Analysis & Real Estate or International Business.

CATEGORY A

274-342	Finance II

CATEGORY B

274-441	Investments and Portfolio Management
274-443	Applied Corporate Finance

CATEGORY C

271-412	Business Taxation
	OR
271-417	Taxation and Business Decisions
271-415	Management Accounting II
271-416	Management Accounting III
274-442	Capital Markets and Institutions
274-444	Insurance and Risk Management
274-645	Money and Capital Markets
278-482	International Financial Management I
278-484	Intermediate Business Law
278-485	Real Estate Finance
278-492	International Financial Management II
278-495	Real Estate Investment Analysis

Others with adviser approval

CATEGORY D

271-311	Financial Accounting I
271-312	Financial Accounting II
	or
271-313	Management Accounting I and another course from Category C
	or (with an adviser's permission)
271-213	Accounting II and another course from Category C

INTERNATIONAL BUSINESS CONCENTRATION

Adviser: Professor Etemad

The objective of this Concentration is to help the student develop conceptual and analytical skills needed to formulate feasible and effective management policies in an international setting. With economic and business activity becoming increasingly internationalized, the program provides useful preparation for careers in a variety of organizations, including local business firms with international trade, licensing or financial arrangements; headquarters or subsidiaries of multinational companies; banks and other international financial institutions; and various governmental organizations.

Because of the importance of each graduate possessing a functional skill, the International Business Concentration may be taken *only* as a Joint Concentration; i.e., the student choosing the International Business Group must also satisfy the requirements of another Management Concentration group. With careful course planning, students can prepare themselves for entering the job market both with an in-depth skill in a particular management function *and* with the breadth of the International Business coverage, thus forming a solid foundation both for a starting job position and for subsequent advancement to higher levels.

The program requirements for the International Business Concentration consist of 18 credits, as follows.

Students are required to take 6 credits in Category A and 12 credits in Category B. 278-382 and 278-383 should be taken in U2.

CATEGORY A:

278-382	**Introduction to International Business**
278-383	**International Business Policy**

CATEGORY B:

278-380	Cross-Cultural Management
278-481	Canada-United States Business Relations
278-482	International Financial Management I

278-483 International Marketing Management
278-491 International Business Law
278-492 International Financial Management II

LABOUR-MANAGEMENT RELATIONS CONCENTRATION

Adviser: Professor Goldenberg

The objective of this Concentration is to provide a general understanding of the factors affecting employer-employee relations, both at the micro-level and in relation to the socio-economic context in which they occur. Students interested in more intensive study of this area are urged to consider the Major Program in Labour-Management Relations.

Students in the Labour-Management Relations Concentration are required to take all courses in Category A and must select at least 9 credits from the courses in Category B.

CATEGORY A:

279-294 Introduction to Labour-Management Relations
279-394 Collective Bargaining
279-492 Public Policy in Industrial Relations

CATEGORY B:

272-423 Personnel Administration
272-425 Compensation Management
279-393 Labour Relations in Québec
279-491 Labour-Management Relations in Practice (6 credits)
279-494 Labour Law
279-495 Labour Relations in the Public Sector
279-500 Labour and Industrial Relations Theory
279-501 Human Resources in Industrial Society
279-502 Labour Unions and Collective Bargaining Research

The following courses are recommended as Non-Management Electives:

154-306 Labour Economics and Institutions (6 credits)
166-312 Industrial Sociology

MANAGEMENT INFORMATIONS SYSTEMS CONCENTRATION

Adviser: Professor K. Griggs

The objective of the concentration is to provide students with a technical and conceptual foundation in the design and development of computer-based information systems for control and management of the organization. The concentration is a basic program for both the developer and user of information systems. For students strongly interested in a career in the field, it is recommended that the Major in Management Information Systems be considered.

Students are required to take the three courses in Category A, at least one course in Category B, and at least two courses from Category C. The Core Course 280-331 should be taken in U1.

CATEGORY A:

273-332 Computer Based Information Systems
273-333 Systems Analysis and Modelling
273-431 Information Systems Design

CATEGORY B:

308-210 Computer Structure and Assembly Language
308-230 Computers in Data Processing
or
273-334 Business Programming Development

The student cannot take both 308-230 and 273-334.

CATEGORY C:

273-432 Information Systems Administration
273-434 Advanced Topics – Computer Systems Applications
273-435 Minicomputers, Microprocessors and their Applications
273-533 Information Systems Auditing & Security

or one other option in Category B

OTHER RECOMMENDED COURSES

1. Non-Management Electives

Given by the School of Computer Science (At least two of these courses strongly recommended as non-management electives for students interested in starting a career in the systems field)

308-300 Programming Languages
308-315 Information Structures
308-320 Files and Data Bases

2. Unrestricted Electives

271-313 Management Accounting I

MANAGEMENT POLICY CONCENTRATION

Adviser: Professor Jaeger

This Concentration is concerned with the study of the functions and responsibilities of general management and the problems which affect the character and success of the total enterprise. The process of strategy formulation and the mobilization of resources will be emphasized.

The student completes the three courses from Category A, and three courses from Category B.

CATEGORY A:

274-343	Managerial Finance
276-463	Corporate Policy
	OR
276-562	Seminar in Organizational Strategy
276-561	Decision-Marking Process in Public and Private Enterprises

CATEGORY B:

271-213	Accounting II
272-422	Creativity, Innovation, and Management
272-522	Cases and Issues in Personnel
275-351	Marketing and Society
276-464	Management of Small Enterprises
276-466	Strategic Planning
	OR
279-591	Long-term Corporate Planning
276-565	Business in Society I
	OR
278-387	Current Environment of the Firm
278-381	Management in the Public Sector I
278-383	International Business Policy

MANAGEMENT SCIENCE CONCENTRATION (QUANTITATIVE METHODS)

Adviser: Professor Yalovsky

The Management Science Concentration prepares students for careers as operations researchers, systems analysts and applied statisticians in business, government and other organizations. It also offers valuable analytical training to students who wish to complement their studies in other management areas. Management Science courses stress conceptual and problem-solving skills and familiarize students with modern mathematical and computational decision-making tools.

277-471	Topics in Quantitatives Analysis
277-472	Production Management
277-632	Sample Survey Methods and Analysis
277-633	Applied Decision Analysis
277-634	Regression Models in Management
277-671	Statistics for Business Decisions
277-675	Applied Time Series Analysis for Managerial Forecasting
277-676	Applied Multivariate Data Analysis
277-678	Simulation of Management Systems
277-679	Applied Optimization I
277-680	Applied Optimization II

Courses in other Departments (up to 6 credits)

The student must choose a total of 18 credits from the above list. Students who want to acquire a better theoretical foundation in Management Science are urged to take courses in the Mathematics Department and the School of Computer Science. Students who want to follow a program of more applied studies are urged to consider courses offered within the Faculty. Most courses are currently offered jointly with MBA students. Students having an interest in applicatins of Management Science in fields allied with Management are encouraged to consider quantitative course selections in other Faculties and Departments.

All courses selected from outside the Faculty should be chosen in consultation with the Group Adviser and with this formal approval. Student are encouraged to select courses for their non-Management electives which are allied with Management Science. For instance, a Major program in Mathematics may be developed by students having an interest in a better preparation in Mathematics. Details of the Major requirements can be obtained from the Group Adviser.

MARKETING CONCENTRATION

Advisers: Professors Bennett, Calantone, Cooper, Goldberg, Warshaw

A Marketing Concentration prepare the student for a wide variety of career opportunities. Marketing graduates have historically found employment in the field of product management, advertising, sales management, marketing management, pricing, marketing research, distribution and retailing. The Marketing Concentration provides a balance between courses focusing on fundamental, theoretical and "need to know" material, and courses with a strong practical and applied orientation. The number of Marketing courses available and the manner in which they are sequenced enables the student to tailor the Marketing Concentration to suit needs and career aspirations.

Marketing Research is a required course and should be taken in U2. The student is also required to take at least two courses in Section A, two courses in section B and one course in section C.

Marketing Management II can be counted *either* as a Secondary Core or a Marketing elective but *not both.* Students treating Marketing Management II as a Secondary Core course must take another course in Category A.

Because certain courses have prerequisites, the sequencing of the student's Marketing Concentration courses should be planned carefully with due regard for those courses which are restricted to U3 students.

REQUIRED:

275-451 Marketing Research

CATEGORY A

275-354 Marketing Management II
275-452 Consumer Behaviour
275-456 Industrial Marketing

CATEGORY B

275-351 Marketing & Society
275-353 Physical Distribution
275-453 Advertising Management
275-455 Sales Management
275-458 Quantitative Analysis
275-459 Retail Management
275-483 International Marketing

CATEGORY C

275-357 Marketing Planning
275-460 Industrial Purchasing
275-461 Advertising Practicium
275-557 Marketing Research II

ORGANIZATIONAL BEHAVIOUR AND PERSONNEL CONCENTRATION

Adviser: Professor Adler

The Concentration in Organizational Behaviour and Personnel provides an opportunity for students to increase their awareness of behavioural issues encountered in job settings, and prepare themselves for careers in the general area of human resource management.

Students must select at least 12 credits from Category A. The remaining 6 credits can be from either Category A or Category B. Students are advised to take at least one course in industrial Relations.

272-420 Group Dynamics and Interpersonal
272-421 Strategies of Organizational Development.
272-422 Creativity, Innovation and Management
272-423 Personnel Administration
272-424 *Employment
272-425 Compensation Management
272-426 *Human Resource Training and Development
272-521 Leadershipe Style and Organizational Stress
272-522 Quality of Working Life
278-389 Changing Managerial Roles - Women and Men
279-501 Human Resources in Industrial Society

***Offered by the Centre for Continuing Education.**

CATEGORY B:

278-380 Cross-Cultural Management
279-294 Introduction to Labour-Management Relations
279-393 Labour Relations in Québec
279-394 Collective Bargaining
278-582 Hospital Organization and Management
166-312 *Industrial Sociology
166-420 *The Study of Organizations (6 credits)
204-406 **Psychological Tests and Measurement

*** Offered by the Sociology Department**
****Offered by the Psychology Department**

Students choosing Psychological Tests and Measurement will not be required to take the prerequisite introductory Psychology, but should notify the course instructors that Introductory Psychology has not, in fact, been taken.
Note: Students completing the above Concentration who are selected for 272-429D, Advanced Organizational Behaviour for Course Counsellors, will apply 3 credits toward Category B and 3 credits toward their non-Management electives.

PUBLIC SECTOR MANAGEMENT CONCENTRATION

Adviser: Professor French

Concentration in Public Sector Management is intended to prepare future private sector managers to plan in a business environment in which public sector policies and programs are an increasingly significant factor. In addition, it is intended to provide basic background for students considering a career in government, public enterprise, or other not-for-profit institutions.

The student must take all 9 credits from Category A and the remaining 9 credits from Category B.

55A:

276-561 Decision-Making in Public and Private Enterprise
278-381 Management in the Public Sector I
278-385 Management in the Public Sector II

55B:

275-351 Marketng and Society
276-562 Seminar in Organizational Strategy
278-384 Business Law II
278-387 Current Environment of the Firm
278-388 Business Law II
278-481 Canada-United States Business Relations
278-581 Health Care Organization
278-582 Hospital Organization and Management
279-492 Public Policy in Industrial Relations
279-495 Labour Relations in the Public Sector
160-469 Politics of Regulations

With permission of the group adviser, appropriate courses in Political Science, Economics, History or Law may be counted toward fulfillment of Category B.

URBAN ANALYSIS AND REAL ESTATE CONCENTRATION

Adviser: Professor Eger

field of Urban Analysis and Real Estate is a broad one which is intended to educate students for careers in management positions in both private and public sectors. Careers patterns arising from courses in Urban Analysis and Real Estate can be found with mortgage lending institutions, real estate development companies (in housing and commercial projects), appraisal firms, planning agencies, as well as the public sector either at a federal, provincial, regional or urban level.

Double concentrations are encouraged, in particular for Finance, Marketing and Smaller Business students. The courses in Category A also are available as free electives for management and non-management students. Students in Finance may use Real Estate Finance and Real Estate Investment Analysis as Category C courses (in Finance).

udents are required to take all 12 credits in Category A and two courses from Category B. In addition, a selected number of management electives (Category C) and non-management electives (Category D) are highly recommended but are not compulsory for the student wishing to take advantage of the potential of this Concentration. It is suggested that the student consult with the adviser regarding the above electives. Students are advised to plan their entire Concentration early in their program to ensure that all prerequisites will be met. Credits taken to satisfy the requirements of Category B will not count toward the non-Management Elective requirements of the B.Com. Business Law I or equivalent must be taken in U2.

Students wishing to apply for professional appraisal certification after graduation, are advised to review the requirements by contacting the adviser.

CATEGORY A:

278-485	Real Estate Finance
278-487	Real Estate Valuation
or	
629-301	Land Economics (Continuing Education)
278-495	Real Estate Investment Analysis
278-586	Land Law

CATEGORY B:

154-568	Urban and Regional Economics (Economics Department)
183-314	Intermediate Urban Geograph (Geography Department)
301-435	Urban Planning (2 credits – School of Architecture)
303-540	Urban Transportation Planning (Civil Engineering Department)
490-004	Land Use Planning (Faculty of Law / Urban Planning)[1]
628-207X61	Building Construction (Continuing Education). See Professor Eger for details before registering.
629-301	Land Economics (Continuing Education / if not taken in Category A)

[1]Prerequisite: 278-586 Land Law for students from the Faculty of Management. Students must obtain written permission from the Faculty of Management and apply at the Student Affairs Office of the Faculty of Law prior to registration for permission to enrol. Students registering without permission will receive no credit for the course.

CATEGORY C: (RECOMMENDED MANAGEMENT ELECTIVES)

271-213	Acccounting II
271-417	Taxation and Business Decisions
274-343	Managerial Finance
275-451	Marketing Research

CATEGORY D: (RECOMMENDED NON-MANAGEMENT ELECTIVES)

The student may elect either of the two courses not already taken in Category B or any of the following:

160-318	Local Government in Comparative Perspective (Political Science Department)
407-637	Housing Policy (School of Social Work)
409-612	Theory of Planning (School of Urban Planning)

9 UNDERGRADUATE COURSES OF INSTRUCTION

SPECIAL NOTE

Course numbers are seven characters in length (see illustration below).

280–2	2	1	A
F1 F2	F3	F4	F5

Field 1 – Involves a three-digit number designating the department of group within the University offering the course. In the Faculty of Management the following association of numbers and subject areas will be used.

271	Accounting
272	Organizational Behavior
273	Management Information Systems
274	Finance

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275	Marketing
276	Policy
277	Management Science
278	General
279	Labour-Management Relations
280	Primary Core

Field 2 – is a number which designates the level at which the course is usually taken.

Number	Year usually taken in	
2	U1	
3	U2	
4	U3	
5	U3	Taken with MBA students
6	U3	Taken with MBA students

Field 3 – designates the subject area, being the third digit of Field 1 for elective courses.

Field 4 – designates the sequential number of the course in that subject and year.

Field 5 – is a letter designating the time of year the course is given.

A:	duration Fall term only
B:	duration Winter term only
D:	duration through Fall and Winter terms
C:	duration Summer Session beginning in May
L:	duration Summer Session beginning in June
T:	duration Summer Session beginning in July or August
X:	duration Fall Evening term only
Y:	duration Winter Evening term only

When no term is designated the course is in some years offered in the first term and in others in the second, or in both. An up-to-date schedule should be consulted.

The number of credits that a course carries is not indicated in the course number; in the following course descriptions the course credits are indicated separately.

Example: The course number 280-221A denotes a course offered by the Faculty of Management, part of the Primary Core, usually taken in the U1 year, in Organizational Behaviour, the first course in that subject, given in the first term. This corresponds to Social Psychology.

PRIMARY CORE COURSE DESCRIPTIONS

154-200 ECONOMIC ANALYSIS AND APPLICATIONS. (6 credits). An introduction to the study of economics, including price theory, national income determination, money and banking, international economic relations, and economic policy. Students may substitute 154-203 Macroeconomic Analysis and Applications and 154-204 Microeconomic Analysis and Applications.
(Offered by the Economics Department)

189-224 APPLIED MATRIX ALGEBRA. (3 credits). Matrix addition and multiplication, transposition, partitioning. Simultaneous linear equations: Gaussian elimination, Gauss-Jordan reduction. Consistency. Rank and inverse. Null space. Formulation of practical problems in matrix notation: input-output analysis. Geometrical applications: angle, distance, area. Least-squares approximations. Determinant, trace, eigenvalues, eigenvectors. Positive definite matrices, quadratic forms. Linear programming; Markov chains. Emphasis towards applications in business and management. (This course is not open to students in Major Mathematics nor to students who have taken or are taking 189-223, -234, -245, -247).

280-211 ACCOUNTING I. (3 credits). An introduction to financial accounting. The principles of financial accounting are presented, beginning with the fundamentals of recording accounting transactions, and proceeding through all components of financial statements. Considerable emphasis is given to conceptual matters involved in financial reporting, such as problems with historical costs, depreciation, and other items of current concern in financial accounting.

280-221 SOCIAL PSYCHOLOGY. (3 credits). Method and theories of analyzing individual and small group behaviour. Topics include attribution theory, person perception, interpersonal attraction, attitude formation and change, social influence, leadership, and group dynamics. An experimental approach to social behaviour is emphasized.

280-222 INTRODUCTION TO ORGANIZATIONAL BEHAVIOUR. (3 credits). *(Prerequisite: 280-221).* The social psychology of organizations: individual motivation and communication style; group dynamics as related to problem solving and decision making in the work place and a complex system as they relate to leadership style, work structuring and the larger environment. The course shows the continual interdependence of individual, group and organization task and structure.

All Management courses have limited enrolment. For non-management students, section slips for all courses are available after April 30th in Bronfman 453. Written approval of student's own adviser is mandatory before sectioning.

280-271 STATISTICS I. (3 credits). *(Prerequisite: 6 credits in calculus).* The course introduces statistical concepts and methodology, demonstrates their application to management problems, and constitutes a foundation for further study in the subject. Topics include: descriptive statistics; probability theory, random variables, important discrete and continuous probability distributions, sampling and sampling distributions, interval estimation and index numbers.

280-272 STATISTICS II. (3 credits). *(Prerequisite: 280-271).* Hypothesis testing and estimation, sampling procedures, nonparametric procedures, goodness-of-fit tests, analysis of variance, simple and multiple regression analysis, time series.

280-323 ORGANIZATIONAL POLICY. (3 credits, open to U3 B.Com students only) The course focuses on the primary functions of general management, particularly the formation of a corporate strategy that relates the company's opportunities to its resources, competence, and leadership style. It also involves developing a system for measuring organization effectiveness.

If offered, section 09 will be designated as a *French* Section, open to non-Francophone students having a good working knowledge of French who wish to increase their fluency; lectures, classroom discussion and cases will be in French, readings will be assigned in both languages. Students will be assessed on the course content and not their fluency in the language. Enrolment in this section will be limited; priority will be given to students whose native language is not French. Francophone students are encouraged not to register in the *French* Section.

280-331 MANAGEMENT INFORMATION SYSTEMS. (3 credits). This course provides an introduction to computer systems and program flowc-harting. Specific emphasis is placed on developing the ability to program (in Fortran) and utilise the resources available on the McGill time-sharing system. Problems of implementing computer systems in the organization are discussed.

280-341 FINANCE I. (3 credits). *(Prerequisites: 280-271, 280-211 and first semester of 154-200D where Microeconomics is treated).* An Introduction to the principles, issues, and institutions of Finance. Topics include valuation, risk, capital investment, financial structure, cost of capital, working capital management, financial markets, and securities.

If offered, section 09 will be designated as a *French* Section, open to non-Francophone students having a good working knowledge of French who wish to increase their fluency; lectures and classroom discussion will be in French; text, readings, etc will be in English. Students will be assessed on the course content and not their fluency in the language. Enrolment in this section will be limited; priority will be given to students whose native language is not French.

280-352 MARKETING MANAGEMENT I. (3 credits). An introduction to marketing principles and management, focusing on the problem solving and decision making from the marketing manager's perspective. Topics covered include: The marketing concept; marketing strategies; marketing research; buyer behaviour; product and price policies; advertising, distribution and sales force decision. The course relies on lectures, text material and case studies.

If offered, section 09 will be designated as a *French* Section, open to non-Francophone students having a good working knowledge of French who wish to increase their fluency; lectures and classroom discussion will be in French; text, readings, etc will be in English. Students will be assessed on the course content and not their fluency in the language. Enrolment in this section will be limited; priority will be given to students whose native language is not French.

280-373 OPERATIONS RESEARCH. (3 credits). *(Prerequisite: 280-271).* Topics covered include: introduction to decision analysis and risk attitudes, inventory control, linear programming and simulation. The course stressed the formulation of problems and their solution by standard methods or by computer packages.

280-393 MANAGERIAL ECONOMICS. (3 credits). *(Prerequisite: 154-200).* The course focuses on the application of economic theory to management problems and the economic foundations of marketing, finance, and production. Attention is given to the following topics: price and cost analysis; demand and supply analysis.

425-201 EFFECTIVE WRITTEN COMMUNICATION. (3 credits). A course designed to help students develop the quality and effectiveness of writing in various academic and professional situations. Emphasis is on the writing process itself: appropriate problem-solving strategies; ways of generating, developing and organizing ideas; designing communication for different audiences and purposes; revising and editing texts; and analyzing writing problems.

It is Faculty Policy that all U1 students, as of September 1981, are required to complete this course. On the basis of a student's preliminary work (placement test), the Instructor may require

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a student to defer his registration in this course until he has successfully completed a course in remedial English. The Instructor's decision will be final.

ELECTIVE COURSES IN THE FACULTY OF MANAGEMENT

ACCOUNTING COURSES

271-213 ACCOUNTING II. (3 credits). *(Prerequisite: 280-211).* This course is intended for students not concentrating in Accounting, but desiring an introduction to Managerial Accounting and cost accounting. The course will deal with Accounting as an aid to Management in the planning and control of operations. Students cannot count both 271-213 and 271-313 for credit. A student who takes this course and then enters the Accounting Concentration will be required to take 271-313, but will not be permitted to count this latter course for credit.

271-311 FINANCIAL ACCOUNTING I. (3 credits). *(Prerequisite: 280-211).* A detailed examination of the problems of measurement, recording and reporting of assets and related revenues and expenses.

271-312 FINANCIAL ACCOUNTING II. (3 credits). *(Prerequisite: 271-311).* A continuation of Financial Accounting I, examining problems of liabilities and owner's equity.

271-313 MANAGEMENT ACCOUNTING I. (3 credits). *(Prerequisite: 280-211).* Cost accounting, budgeting and budgetary control, standard costing, breakeven analysis, variable costing, costs for decision-making. Students cannot count both 271-213 and 271-313 for credit.

271-411 ACCOUNTING THEORY. (3 credits). *(Prerequisite: 271-312).* The course will focus on developing a cohesive body of postulates which describe the discipline of accounting. A normative model (as opposed to positive) will provide the foundation for this endeavor.

271-412 BUSINESS TAXATION. (3 credits). *(Prerequisite: 271-312).* An examination of Federal income tax and its impact on business operations: Covers tax treatment of individuals, Partnerships and corporations; and consideration of international aspects. Proposals for tax changes since the Carter Commission Report will be reviewed and emphasis will be placed on concepts underlying most recent legislation. Students cannot count both 271-412 and 271-417 for credit.

271-413 SYSTEMS AND AUDITING. (3 credits). *(Prerequisite: 271-312).* The principles of accounting systems design and auditing.

271-414 FINANCIAL ACCOUNTING III. (3 credits). *(Prerequisite: 271-312).* Advanced topics in financial accounting, including consolidations, business combinations, and other topics.

271-415 MANAGEMENT ACCOUNTING II. (3 credits). *(Prerequisite: 271-313).* A critival evaluation of accounting control systems and some related quantitative business controls. Conceptual and measurement problems in evaluating performance, including problems of decentralization. Control of the data-information flow.

271-416 MANAGEMENT ACCOUNTING III. (3 credits). *(Prerequisite: 271-415).* A survey of planning and decision concepts and models with a view of specifying the relevant data or information for planning and a number of common classes of business decisions. Behavioral an information analysis of the planning/control function using recent literature and research results which address current problems and solutions are emphasized.

271-417 TAXATION AND BUSINESS DECISIONS (3 credits). *(Prerequisite: 280-211).* This course is designed for students not concentrating in Accounting. It provides an overview of the income tax system with emphasis on its impact on selected business decisions. Coverage includes individual and corporate taxation, tax shelters, tax planning and international operations. Extensive use is made of cases. A student who takes this course and then enters the Accounting Concentration will not be permitted to count this course for credit toward Category C of the Accounting Concentration requirements.

ORGANIZATIONAL BEHAVIOUR COURSES

272-420 GROUP DYNAMICS AND INTERPERSONAL RELATIONS. (3 credits). *(Prerequisites: 280-221, 280-222 or permission of Instructor).* Students will explore theory, research, and applications relating to group dynamics. Students will increase their level of awareness of group dynamics and their skills at functioning in work groups. Teaching/learning methods will include lecture and discussion, learning cells, skill development exercises and training laboratories (group development and interpersonal sensitivity).

272-421 STRATEGIES OF ORGANIZATIONAL DEVELOPMENT. (3 credits). *(Prerequisites: 280-221, 280-222 or permission of Instructor).* An

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examination of planned change processes aimed at improving organizational problem solving and renewal processes – utilizing the applied behavioural sciences and experience based learning. Students will examine theory and techniques of organizational diagnosis and intervention.

272-422 CREATIVITY, INNOVATION, AND MANAGEMENT. (3 credits). *(Prerequisites: 280-221, 280-222 or permission of Instructor).* This course will study the process of innovation, creative personality characteristics, the management of creativity and the implication of innovation in organizations. The emphasis will be on studies of creative processes, individuals, and public and private organizations through exercises, case studies, interviews and selected readings.

272-423 PERSONNEL ADMINISTRATION. (3 credits). *(Prerequisites: 280-221, 280-222 or permission of Instructor).* This course is designed to introduce students to the various issues involved in personnel administration. Topics include the development of the ability to design the personnel subsystem within the firm and the problems encountered in such areas of recruitment, selection, motivation, communication and management training. Both a theoretical and case approach will be used.

272-424 EMPLOYMENT. (3 credits). *(Prerequisites: 280-222, 272-423, 280-271).* Reviews in sequence all aspects of the hiring of employees. Topics covered will include manpower planning, recruiting, selection, placement orientation, retirement and dehiring. Each area will be covered from legal, technical and theoretical perspectives.

272-425 COMPENSATION MANAGEMENT (3 credits). *(Prerequisite: 280-222).* Students are exposed to compensation theories and their relation to compensation policies within organizations. Behavioural effects of compensation plans and how to make compensation plans more effective will be discussed. Some topics covered in the course are: Nature of financial motivation, Job design and job analysis, Compensation practices, Designing a compensation package; pay and organizational effectiveness.

272-426 HUMAN RESOURCE TRAINING AND DEVELOPMENT. (3 credits). *(Prerequisites: 280-221, 280-222, 272-423).* Includes discussion of planning, conceptualization, design, implementation and evaluation of training and career development programs. Will review the major techniques in each area. The training and development will be approached from a systems point of view.

272-429 ADVANCED ORGANIZATIONAL BEHAVIOUR FOR COURSE COUNSELLORS. (6 credits). An intensive examination of behaviour in organizations, coupled with training in teaching methods, to prepare students to conduct a section of 280-222, Introduction to Organizational Behaviour. Selection of course counsellors is made through assessment centers held toward the end of preceding Winter term. Only students thus selected will be permitted to register for this course.

B.Com. students completing a Concentration other than Organizational Behaviour and Personnel will allocate 3 of these credits as free Management electives and the remaining 3 credits as non-Management electives.

- **272-521 LEADERSHIP STYLE AND ORGANIZATIONAL STRESS.** (3 credits). *(Prerequisites: 280-221, 280-222 or permission of Instructor).* Provides an analytic model of action in which the relationship will be emphasized between an individual's leadership style, symptom formation and decision making processes in organizations. Themes will be emphasized as conceptual frameworks of human development, the relationship between psychopathology and leadership, and the nature of power, authority and motivation.

272-522 QUALITY OF WORKING LIFE. (3 credits). *(Prerequisites: 280-221, 280-222 or permission of Instructor).* Major factor influencing organizational effectiveness and the quality of working life through the analysis of selected real-life organizations. The approach used views an organization from two different, although interrelated, perspectives – its technology and its social system. Through term projects, readings, lectures, and classroom exercises, students become familiar with both the concepts and the practical application of this "socio-technical system" approach.

273-332 COMPUTER BASED INFORMATION SYSTEMS. (3 credits). *(Prerequisites: 280-331 or its equivalent, 280-211 strongly recommended).* Methodology, techniques an components of systems design and programming, with emphasis on management information systems.

273-333 SYSTEMS ANALYSIS AND MODELLING. (3 credits). *(Prerequisite: 273-332).* Theoretical approaches to systems analysis are investigated. Analytical, algorithmic and heuristic optimization methods are considered from the viewpoint of management decision-making. Emphasis is placed on developing programs to solve related problems.

273-334 BUSINESS PROGRAMMING DEVELOPMENT. (3 credits). *(Prerequisites: 280-331, 273-332).* Program development in business. Em-

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phasis on data processing application programs in COBOL using structured programming techniques. Topics include table handling, sequential file processing, error controls, audit trails, control cards, testing and forms. Software packages such as MARKIV and SAS are investigated.

273-431 INFORMATION SYSTEMS DESIGN. (3 credits). *(Prerequisites: 273-332, 273-333, and 273-334 or 308-230).* Methods and procedures of designing business information systems are discussed. A comprehensive case duty extending throughout the term emphasizes the application of the methodology.

273-432 INFORMATION SYSTEMS ADMINISTRATION. (3 credits). *(Prerequisites: 273-332, and 273-334 or 308-230).* This course covers the problems of managing the information systems resource. A combination of case studies and lectures is used to illustrate the problems of computer acquisition, in-house or via service bureaux, of information systems development, of minicomputer proliferation, of organizational development and of other areas of importance to information systems managers.

273-434 ADVANCED TOPICS – COMPUTER SYSTEMS APPLICATIONS. (3 credits). *(Prerequisites: 273-431; 308-210).* This is an advanced seminar for senior students. Topics will be selected from current issues such as data base applications, on-line systems, privacy and computers, etc.

273-435 MINICOMPUTERS, MICROPROCESSORS AND THEIR APPLICATIONS. (3 credits). *(Prerequisite: 273-431).* The course provides students with exposure to analysis, design and implementation of business applications using minicomputers and microprocessors. It also discusses relevant hardware and software developments.

273-533 INFORMATION SYSTEMS AUDITING & SECURITY. (3 credits). *(Prerequisites: 273-431, 273-334 or 308-230).* The course will consider, at an advanced level, problems and methods of establishing effective controls of computer systems, evaluation of controls, and computer aids to evaluation and auditing.

FINANCE COURSES

274-342 FINANCE II. (3 credits). *(Prerequisites: 280-341, 280-272).* A presentation of the modern theory of Finance. A foundation is established from which students may pursue further specialization in Finance. The course consists of in depth study of corporate finance, risk, diversification, portfolio analysis, and capital market theory. Students will not be permitted to count both 274-342 and 274-343 for credit.

274-343 MANAGERIAL FINANCE. (3 credits). *(For Non-Finance Concentration.) (Prerequisite: 280-341).* A second course in Finance for students not specializing in a Finance Concentration. Topics addressed include short and long term asset and liability management, risk and diversification, and the nature of capital markets. The course format will be a mixture of cases, lectures, projects and discussions. Students will not be permitted to count both 274-342 and 274-343 for credit.

274-441 INVESTMENTS AND PORTFOLIO MANAGEMENT. (3 credits). *(Prerequisite: 274-342).* Application of investment principles and security analysis to the selection and comparison of equity and fixed income securities in the current economic and financial environment. Also covered are: determinants of stock prices, growth models and portfolio diversification.

274-442 CAPITAL MARKETS AND INSTITUTIONS. (3 credits). *(Prerequisite: 280-341).* Functions of the capital market through flow of funds analysis and an examination of portfolio activities of financial intermediaries. Also covered are: Securities regulations and ethical considerations, the term structure of interest rates and risk and rates of return in debt and equity markets.

274-443 APPLIED CORPORATE FINANCE. (3 credits). *(Prerequisite: 274-342).* Concepts and techniques developed in earlier courses are applied to problems faced by managers in Corporate Finance. Such problems include working capital management, capital budgeting, capital structure, dividend policy, cost of capital and mergers and acquisition. The course stresses the application of theory and techniques and extensive use is made of case studies.

274-444 RISK MANAGEMENT AND INSURANCE. (3 credits). *(Prerequisite: 280-341).* Beginning with a description of risk, this course analyses risk exposures of the individual and the firm. A wide variety of techniques for reducing risk exposure are studied including Life, Property and Casualty Insurance. In addition, the course treats the problems faced by insurers such as re-insurance and investment policy.

274-645 MONEY AND CAPITAL MARKETS. (3 credits). *(Prerequisite: 280-341).* Demand for and supply of money and other financial instruments by and to banks and near banks. This is done with simple analytical models integrating the Canadian institutional aspects. The role of the banking sector in the money creation process is stressed as well as international aspects of

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monetary policy.
NOTE: Open to U3 students with the professor's consent.

MARKETING COURSES

275-351 MARKETING AND SOCIETY. (3 credits). *(Prerequisite: 280-352).* The social issues and concerns affecting marketing management are examined and the two way relationship between marketing and social change is explored. Particular attention is paid to consumerism, government regulation in marketing, corporate social responsibility, social marketing and marketing role in a conserver society.

275-353 PHYSICAL DISTRIBUTION. (3 credits). *(Prerequisite: 280-352).* Systems approach to physical distribution; traffic management; plant and warehouse location; inventory control; information flows and order processing; supply scheduling; total cost planning; organizational patterns.

275-354 MARKETING MANAGEMENT II. (3 credits). *(Prerequisite: 280-352).* The decision areas in marketing will be probed in depth. Its main emphasis will be on the use of marketing theory and concepts in the solution of realistic marketing problems. It will focus on decision making in a marketing context using cases, some of which will be computer assisted, and readings.

275-357 MARKETING PLANNING. (3 credits). *(Prerequisites: 275-354 and one other Marketing course. U3 students only).* Marketing Planning is designed as a capstone to previous marketing courses, providing a transmission into actual business. The student learns a structured approach to developing a marketing plan, proceeding from corporate mission and objectives through to detailed marketing mix programs. Classes are a combination of lectures, discussions and cases. A field project provides the student with a real life marketing planning experience.

275-451 MARKETING RESEARCH. (3 credits). *(Prerequisites: 280-352, 280-272 or equivalent).* The student is exposed to the basic theoretical techniques and procedures common in marketing research today. Areas covered include research design, sampling, questionnaire design, coding, tabulating, data analysis (including statistical techniques). Specialized topics may encompass advertising, motivation and product research; forecasting and location theory.

275-452 CONSUMER BEHAVIOUR. (3 credits). A study of basic factors influencing consumer behaviour. Attention is focused on psychological, sociological and economic variables including motivation, learning, attitude, personality, small groups, social class, demographic factors and culture, to analyze their effects on purchasing behaviour.

275-453 ADVERTISING MANAGEMENT. (3 credits). *(Prerequisite: 275-452).* Surveys advertising and promotion in Canadian context. Examines activities as they relate to advertisers, the advertising agency and media. Stresses advertising by objectives as the approach to developing strategy and tactics. Real examples from current campaigns are the focal point of class discussions.

275-455 SALES MANAGEMENT. (3 credits). *(Prerequisite: 275-451).* This course explores the various responsibilities of the sales manager as they relate to his sales force. These includes the selection of process, training alternatives, compensation and incentive plans, supervision and evaluation, and budgeting and forecasting. Case studies and discussions of sales force models are used.

275-456 INDUSTRIAL MARKETING. (3 credits). *(Prerequisite: 275-354).* Decision-making and management of the marketing effort in an industrial product context. Topics covered include the industrial marketing system; industrial purchasing; researching the industrial market; product, price distribution, selling and advertising decisions; strategies for industrial markets. A combination of lecture and case discussions are used.

275-458 QUANTITATIVE ANALYSIS FOR MARKETING DECISIONS. (3 credits). *(Prerequisite: 275-451).* Investigation of actual and potential management science applications to marketing problems. The point of view is primarily that of marketing management and marketing decision makers. Emphasis is put on implementation possibilities and limitations.

275-459 RETAIL MANAGEMENT. (3 credits). *(Prerequisite: 275-451).* Principles and methods of management as applied to retailing, including location, organization, personnel, buying, inventory control, selling and advertising, services, expenses and profits.

275-460 INDUSTRIAL PURCHASING. (3 credits). *(Prerequisite: 280-352). (U3 students only).* Industrial Purchasing provides the student with a greater understanding of purchasing functions, techniques, and organization. The course is divided into two parts: The first part dealing with the firm's purchasing relations with the outside world. The second part with internal decisions, processes and organization. The course consists of a mixture of lectures, discussions and cases.

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275-461 ADVERTISING PRACTICUM. (3 credits). *(Prerequisite: 275-453). (U3 Marketing Concentrators only).* The class will be set up as a mini agency. Attempt will be made to elicit actual advertising problems and cases from the Montreal advertising community. Class work will focus on conceptual and practical framework for advertising, and the development of a project portfolio by the end of the term. Evaluation of the portfolio will be done by the professors involved and a panel of advertising people from the Montreal area.

275-557 MARKETING RESEARCH II. (3 credits) *(Prerequisite: 275-451).* The purpose of this course is to look at marketing research at a more advanced level and from a more technical point of view than Marketing Research 275-451.

POLICY COURSES

276-463 CORPORATE POLICY. (3 credits). Cases and reading explore the theory and practice of business strategy. The point of view is that of the Chief Executive Officer or Entrepreneur. Strategy formulation and execution. Students develop practical skills in analysing a company's situation within its environment, a viable plan of action and a means of executing the plan. (Not open to students who have taken or are taking 276-562).

276-464 MANAGEMENT OF SMALL ENTERPRISES. (3 credits). *(Prerequisite: 280-341).* The distinctive characteristics, risks, opportunities and rewards inherent in the ownership and management of a small enterprise. It will assist students in judging the appropriateness of an entrepreneurial career and in selecting and timing a specific venture.

276-466 STRATEGIC PLANNING. (3 credits). (U3 students only). Student acquires both pragmatic and theoretical bases for understanding and applying planning methodologies; demonstrating planning successes and failures; and indicating that although research proof is only gradually developing, sufficient hypotheses exist for testing the effectiveness of long-range planning.

276-561 DECISION-MAKING PROCESS IN PUBLIC AND PRIVATE ENTERPRISES. (3 credits). *(Prerequisite: Final year standing or permission of Instructor)* The increasing role of public enterprises raises new problems and complexities for government and business. This course compares their decision-making and administrative processes, and the role of the chief executive officer; emphasis is placed on the role of setting up objectives, defining strategy, and implementation.

276-562 SEMINAR IN ORGANIZATIONAL STRATEGY. (3 credits). *(Prerequisites: U3 standing or permission of the instructor).* The central significance of policy and strategy to top management and their organizations. The effect of environments (external and internal) on the functioning of an organization. The detection of opportunities and threats. An exploration of how organizations set objectives, formulate and implement effective strategies. Attention is focused on the role of the general manager in shaping and leading an organization. Will be run in a seminar form and will revolve around a set of readings, case studies, and a short field project whose findings will be presented to the executive committee of a previously selected company. (Not open to students who have taken or are taking 276-463).

276-565 BUSINESS IN SOCIETY I. (3 credits). *(U2 and U3 students only).* An examination of the traditional capitalist ideology; the dynamic operation of the system; business ethics and values that are compatible with the system; economic, cultural and social contradictions of the system; policies and programs designed to make the system more effective; management in a pluralistic society.

276-567 BUSINESS IN SOCIETY II. (3 credits). *(U3 students only).* An examination of the emerging capitalist ideology; management styles and corporate policies and responsibilities that may be encompassed within the general framework of business morality (perceived as behaviour extending beyond the law, reflecting a level of aspiration rather than a level of duty); new approaches to making business more "responsive" to the needs of society.

279-591 LONG-TERM CORPORATE PLANNING. (3 credits). Topics include: The need and prospects for future studies and long-term planning in business; techniques and approaches including technology forecasting, social forecasting, delphi techniques and scenario writing; limits to growth controversy and the Conserver Society; energy and other resource depletion; pollution and post-industrial and post-consumer waste, and recycling industries; international implications of resource scarcity and its impact on Canadian business.

MANAGEMENT SCIENCE COURSES

277-472 PRODUCTION MANAGEMENT. (3 credits). The course examines the effects of an operating manager's decisions on the firm, its competitive

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position and its risk exposure. Topics include production design; production methods; job-shop, flow-shop or project organization of work; plant location, capacity and lay-out; make-buy decisions; production balancing; equipment selection; work methods and standards; compensation methods; forecasting, planning; scheduling and inventory control.

277-632 SAMPLE SURVEY METHODS AND ANALYSIS. (3 credits). *(Prerequisite: 280-272).* This course deals with the design of surveys and the analysis of survey data with emphasis on management applications. Topics covered include: Design of sample surveys; sampling procedures including simple random; stratified, systematic and unequal probability sampling; multistage and cluster sampling; judgment sampling; ratio and regression estimation; procedures for non-response and non-sampling errors; introduction to experimental methods and experimental design.

277-633 APPLIED DECISION ANALYSIS. (3 credits). *(Prerequisites: 280-272, 280-373).* The course covers the traditional decision model; utility theory including the expected utility axioms, multiattribute utility functions, and preference assessment methods; the role of information in decision-making including Bayesian analysis, valuation of information, and probability assessment methods; group decision-making including group preference functions and game theory; case applications of decision analysis to various areas of management.

277-634 REGRESSION MODELS IN MANAGEMENT. (3 credits). *(Prerequisite: 277-613 or equivalent).* The traditional topics of econometrics relevant to management: general linear model, multicollinearity and dummy variables; generalized least-squares including heteroscelasticity and auto-correlation; stochastic regressors, instrumental variables and lagged variables; tobit and probit models of qualitative choice. Application to a real-world problem (term paper) with the aid of computer programs.

277-671 STATISTICS FOR BUSINESS DECISIONS. (3 credits). *(Prerequisite: 280-272).* Simple, multiple, polynomial and stepwise regression. Matrix approach to regression. One way analysis of variance with and without replication. Analysis of covariance. Multiple comparison procedures. Non-parametric statistical methods. One and multisample problems. Tests of randomness. Homework exercises, require the use of statistical computer programs available on the McGill system.

277-675 APPLIED TIME SERIES ANALYSIS FOR MANAGERIAL FORECASTING. (3 credits). *(Prerequisite: 280-272).* This course is devoted to management applications of time series analysis. Starting with ratio-to-moving average methods, the course deals successively with Census 2, exponential smoothing methods the methodology introduced by Box and Jenkins, spectral analysis and with time-series regression techniques. Computational aspects and applications of the methodology are emphasized. Students are expected to prepare and present case studies.

277-676 APPLIED MULTIVARIATE DATA ANALYSIS. (3 credits). *(Prerequisite: 280-272).* This course is devoted to management applications of multivariate analysis. Computational aspects are emphasized and students are expected to prepare and present case studies. The following topics are discussed: advanced topics in regression, analysis of covariance, factor analysis, discriminant analysis, classification procedures, multidimensional scaling, cluster analysis, MANOVA, graphical analysis.

277-678 SIMULATION OF MANAGEMENT SYSTEMS. (3 credits). *(Prerequisites: 280-272, 280-373).* This course is devoted to building simulation models of management systems. It stresses the design of simulation experiments and the analysis and implementation of results. Students are expected to design a complete simulation of a real problem using a standard simulation language.

277-679 APPLIED OPTIMIZATION I. (3 credits). *(Prerequisite: 280-273 or equivalent).* Topics include linear programming and extensions to decision problems involving quadratic and non-linear models, network analysis, and models of discrete decision problems. The course stresses the solution of complex management problems using efficient optimization tools of operations research. Students will apply the techniques to real management cases and acquire a working knowledge of the computer packages to solve them.

277-680 APPLIED OPTIMIZATION II. (3 credits). *(Prerequisite: 277-679 or equivalent).* This course is devoted to the application of dynamic programming to a variety of decision problems, both in deterministic and probabilistic environments. Topics include dynamic inventory scheduling with uncertain demand, unbounded horizon problems, problems in replacement and maintenance. Supplementary topics will be included every year, depending upon students' interests. Part of the term work will consist in a project chosen by the student, and related to an optimization situation.

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INTERNATIONAL BUSINESS, REAL ESTATE, LAW AND GENERAL COURSES.

278-380 CROSS-CULTURAL MANAGEMENT. (3 credits). Cross-cultural awareness and communication skills necessary to manage in multicultural organizations. Focus on the relationship between cultural values and communication styles as they affect inter and intra cultural communication of managers, personnel and clients of multinational and multicultural organizations.

278-381 MANAGEMENT IN THE PUBLIC SECTOR I. (3 credits) (Not open to U1 students). This course will focus upon the actors, institutions, and processes involved in decision-making, resource allocation, personnel management, administration, evaluation of efficiency and effectiveness, policy development, and organizational change in the federal public sector. Particular attention will be paid to the extensive managerial and organizational reforms of the past decade.

278-382 INTRODUCTION TO INTERNATIONAL BUSINESS. (3 credits). An introduction to the expanded world of the International businessman. Economic foundations of international trade and investment. The international trade, finance, and regulatory frameworks. Relations between international companies and nation-states, including costs and benefits of foreign investment and alternative controls and responses. Effects of local environmental characteristics (educational, sociological, economic, legal, political) on the operations of multi-national enterprises.

278-383 INTERNATIONAL BUSINESS POLICY. (3 credits). *(Prerequisite: 278-382 or permission of Instructor).* Development and application of conceptual approaches to general management policy and strategy formulation in multinational business involvement (licenses, contractual arrangements, turnkey projects, joint ventures); location strategy; technology transfer; ownership strategy, planning for international divestment. Emphasis on developing the student's practical skills, using case studies.

278-384 BUSINESS LAW I. (3 credits). An introduction to the study of law and legal process, including a review of sources of law, court system, and organization and classifications of law. A brief summary of procedural laws as they may affect business transactions, rules of private international law. A study of general principles of contract, protection of creditors, and property law. A study of various forms of guarantees, such as privileges, hypothecs, and commercial pledges.

278-385 MANAGEMENT IN THE PUBLIC SECTOR II. (3 credits). *(Prerequisite: 278-381 or permission of the Instructor).* The actors, institutions and processes involved in some or all of: Provincial public administration; Urban public administration; Intergovernmental relations; The regulatory process; Government-business relations; Public enterprise; Government and the consumer; Science and technology policy.

278-386 COMMUNICATION SKILLS IN MANAGEMENT (3 credits). Development in prospective managers of the skills needed to organize ideas and information for effective, persuasive oral and written communication. Communication in the business world and the major factors influencing the process. Students have ample opportunity to practice letter writing, oral presentation, conducting business meetings and report writing. This course may count as a non-Management elective or Secondary Core, but not both. Only students with proficient English language skills will be accepted into the course.

278-387 CURRENT ENVIRONMENT OF THE FIRM (3 credits). *(Prerequisite: 280-393).* More and more the business of business is not business, it is government, reporters, concerned housewives, and student activists. This course gives students an opportunity to survey the socio-political-economic environment of the firm from the point of view of business. Topics surveyed include the Bryce Commission Competition Policy, Bill 101, Separatism and Investment.

278-388 BUSINESS LAW II (3 credits). *(Prerequisite: 278-384).* A study of special contracts, such as sales, lease, mandate and loan. A study of business organizations, government legislation, the impact on business and marketing, principally as a result of the combines investigation legislation and consumer protection legislation. A brief review of principles in bankruptcy, bills of exchange and insurance.

278-389 CHANGING MANAGERIAL ROLES – WOMEN AND MEN. (3 credits). Changing roles of women and men within organizations as women gain greater managerial status. Topics include: traditional and changing patterns of organizational structure; role stereotypes and myths; differences in achievement motivation, abilities, power and opportunity; equal opportunity legislation, and corporative affirmative action programs; two-career families and sexuality.

278-481 CANADA-UNITED STATES BUSINESS RELATIONS. (3 credits). (U2 and U3 students. *Prerequisite: 278-382 or permission of Instructor).* Analysis, based on theory and practice, of corporate strategies in the Canada-United States

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context. Emphasis upon public policy impact on corporate decision-making and implications of alternative public policy options. Bilateral experience by major industrial sectors examined and compared with global corporate strategies. Survey of theoretical and empirical literature combined with industrial histories and policy case studies.

278-482 INTERNATIONAL FINANCIAL MANAGEMENT I. (3 credits). *(Prerequisite: 280-341).* The international financial environment as it affects the multinational manager. In-depth study of the various balance of payments concepts, adjustment of the external balance, and the international monetary system will be followed by a review of theory and institutional aspects of the foreign exchange and the international (eurodollar) markets.

278-483 INTERNATIONAL MARKETING MANAGEMENT. (3 credits). *(Prerequisite: 280-352, or permission of Instructor).* Marketing management considerations of a company seeking to extend beyond the confines of its domestic market. A review and discussion of required changes in product, pricing, channel, and communications policies to develop an appropriate balance between adapting completely to each local environment on one hand and profiting from an integrated approach on the other hand. Particular attention will be paid to international trade and export marketing in the Canadian context.

278-484 INTERMEDIATE BUSINESS LAW. (3 credits). *(Prerequisite: 278-388).* Overview of legal corporate principles, legal requirements of corporate organizations, methods of corporate financing, principles of Canadian Company Law, including Federal and Québec Company legislation, legal requirements of corporate financing, study of securities legislation and a prospectus.

278-485 REAL ESTATE FINANCE. (3 credits). *(Prerequisite: 280-341 or permission of Instructor).* Fundamentals of real estate finance from the viewpoint of a consumer as well as that of a manager involved in real estate. Second, the functions of a mortgage market are examined on an institutional and regional basis. Third, the implications of an efficient mortgage market are related to the housing market.

278-487 REAL ESTATE VALUATION. (3 credits). *(Prerequisite: 278-485).* Methods of real estate appraisal. The practical relationship of appraisal to feasibility and market analysis is considered in detail. Procedures, practices and problems of assessment and expropriation are reviewed. The impact of the statistical methods on the appraisal profession are also examined.

278-489 INDEPENDENT STUDIES IN MANAGEMENT. (3 credits). *(U3 students only).* Research reading or field projects, permitting independent study under the guidance of a staff member specializing in the field of interest. Projects have to be arranged individually with instructors. A detailed student proposal must be submitted to the instructor and the Associate Dean during the first week of term. CGPA of at least 3.0 required.

278-491 INTERNATIONAL BUSINESS LAW. (3 credits). (Prerequisite: 278-382). A general introduction to the legal aspects of foreign trade and investment transactions. Forms and documentation of various types of foreign trade contracts. Conflict avoidance, arbitration, and litigation arising from international transactions. Government regulation of foreign trade. Legal aspects of the international transfer of investments and technology. Conventions and institutions of international economic cooperation (e.g. GATT, ICC, IMF, etc.)

278-492 INTERNATIONAL FINANCIAL MANAGEMENT II. (3 credits). (Prerequisite: 278-482). Primary focus will be on the operational problems of financial management in the multinational enterprise: Financing of international trade, determining the firm's exposure to foreign exchange rate changes, protection against exchange losses, international capital budgeting, multinational cost of capital, working capital management and international portfolio diversification.

278-495 REAL ESTATE INVESTMENT ANALYSIS. (3 credits). *(Prerequisites: 278-485 or permission of Instructor).* Risk and return in real estate investment. Analysis of investment measurement techniques, financial combinations, ownership patterns and tax strategy are the avenues which are analyzed on a risk-return relationship. A computer model enables the student to simulate a variety of investment strategies.

278-581 HEALTH CARE ORGANIZATION. (3 credits). Overview and study of the Québec Health care system, within the Canadian context. Brief historical overview and analysis of its major elements: Québec Ministry of Social Affairs, Regional Health Councils, (CRSSS), Social Service Centres, Hospitals (different types), etc. Several critical issues are then examined: planning health care needs and resources, financing health care, labor relations, patterns of power and assessing quality of care.

278-582 HOSPITAL ORGANIZATION AND MANAGEMENT. (3 credits). (1) How do hospitals define their goals and priorities, (2) What are the basic elements and functioning of administrative and medical organization structure, (3) What makes

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the management of hospitals particularly complex, (4) How to assess overall as well as departmental performance. Course material, approach and assignment are strongly practice-oriented.

278-586 LAND LAW. (3 credits). *(Prerequisite: 278-384 or equivalent).* This course is designed to give an overview of legal aspects of real property and real estate transactions. The student examines creation of interests in land and the rights and responsibilities encompassed. Transactions in the sale of purchase of real property involve a study of securities such as leases and mortgages. Knowledge of French is useful.

INDUSTRIAL RELATIONS COURSES.

279-294 INTRODUCTION TO LABOUR-MANAGEMENT RELATIONS. (3 credits). An introduction to labour-management relations, the structure, function and government of labour unions, labour legislation, the collective bargaining process, and the public interest in industrial relations.

- **279-393 LABOUR RELATIONS IN QUEBEC.** (3 credits). *(Prerequisite: 279-294).* Students study the evolution of Québec industrial relations policy and practice against this province's unique socio-cultural, economic and political background. In addition to providing a historical perspective, the course emphasizes contemporary events and problems which form the primary subject matter of student research projects.

279-394 COLLECTIVE BARGAINING. (3 credits). *(Prerequisite: 279-294).* Designed for those students who wish to study principles in collective bargaining in Canada and abroad. It deals with the structure of the bargaining parties and the structure of bargaining itself. It is problem-oriented and relies on empirical data and case problems.

279-491 LABOUR-MANAGEMENT RELATIONS IN PRACTICE. (6 credits). *(Prerequisite: 279-294).* Guided reading, discussion groups, mock collective bargaining sessions, contact with practitioners in the field and problem-oriented research assignments give students an opportunity to apply knowledge they have gained in their Labour-Management Relations Program. Students are encouraged to grapple with a wide range of problems in industrial relations theory, policy and practice.

279-492 PUBLIC POLICY IN INDUSTRIAL RELATIONS. (3 credits). *(Prerequisite: 279-294).* Development and structure of the legislative framework governing labour-management relations. Court cases, arbitration precedents, labour relations board activities, and public attitudes are considered as well in the formation of a public policy for labour relations. Emphasis on the major issues shaping labour policy, and on the linkages between policy and experience in labour management relations. The federal and Québec jurisdictions are treated in some detail.

279-494 LABOUR LAW. (3 credits). Introduction to the basic concepts of labour law relevant to the practice of industrial relations. Course will review the historical development of labour law in certain social and legal systems and examine the culmination of this development in the legislative enactments and jurisprudence of Canadian jurisdictions and certain comparative foreign models. Open to Labour-Management Relations Major students in U3.

279-495 LABOUR RELATIONS IN THE PUBLIC SECTOR. (3 credits). *(Prerequisite: 279-394).* Labour relations in federal, provincial, municipal, and quasi-public services such as hospitals, schools, government agencies and boards. Students examine some of the more contentious current issues in public service labour relations and compare and analyse the alternative methods that have been evolved to deal with them. Note: Students who have taken 278-688 may not take this course for credit.

279-500 LABOUR AND INDUSTRIAL RELATIONS THEORY. (3 credits). *(Prerequisite: 279-294).* Analyzes the history of thought and conflicting theories regarding trade unionism and collective bargaining in order to explore contemporary labour-management problems.

279-501 HUMAN RESOURCES IN INDUSTRIAL SOCIETY. (3 credits. *(Open to U3 and U2 students only).* Covers the fundamentals of "manpower" analysis and policy making for the human resources of Canada and Québec. Introduces a fundamental framework for manpower analysis and policy formations. Reviews occupational forecasting in "manpower" estimation and, provides an introduction to further human resource analysis.

279-502 LABOUR UNIONS AND COLLECTIVE BARGAINING RESEARCH. (3 credits). *(Prerequisites: 279-294, 280-272 or equivalent, 154-306 helpful but not mandatory).* Course weds quantitative knowledge about labour unions in Canada and development of applied research skills. Begins by exploring facts concerning extent of union organization, structure, membership and scope of contracts. Teaches and gives practice in application of research tools to solution of labour research problems identified in first part of course.

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279-591 LONG-TERM CORPORATE PLANNING. (See course description under POLICY CORSES).

FURTHER COURSES OF INTEREST

101-302A CANADIAN BUSINESS HISTORY. (3 credits). History of business in Canada. Topics include: Evolution of business structure and function; development of the firm by sector and by geographical size and origins; growth of markets and marketing; transformations in accounting; technological change; professionalization of management; labour; government relations; the social nature and linkages of business. Where appropriate, comparative attention will be paid to the foreign business experience.

125-300 FRANÇAIS COMMERCIAL. (3 crédits). *(Prérequis: 125-200D ou 201D ou examen d'entrée).* Ce cours porte sur la langue des affaires parlée et écrits au Québec. Exercices oraux et écrits: acquisition de vocabulaire, terminologie générale; rédaction de lettres et de rapports; étude de structures grammaticales trouvées principalement dans des documents commerciaux.

125-400 FRANÇAIS COMMERCIAL AVANCÉ. (3 crédits). *(Prérequis: 125-300).* Étude en profondeur de la terminologie utilisée dans des domaines très spécifiques des affaires: le marketing, les banques, les assurances, le droit commercial, la bourse, etc.

305-262 MANUFACTURING PRODUCTION (3 credits). Industrial manufacturing operations, with an emphasis on metal cutting machine tools, will be described and practiced. Lectures are complemented by laboratory demonstrations and student exercises on machine tools and with metrological instruments. Topics include operation of machine tools, process selection, machining accuracy, manufacturing methods related to product design, repeatability, inspection, quality control, production efficiency and the specification and selection of machine tools. No engineering background is required. (Not open to students who have taken 305-260).

334-640 AGRIMARKETING. (3 credits). Agriculture and food marketing, management, and policy. Detailed study of marketing functions, commodity marketing, retail and food service marketing encompassing the total Canadian agriculture and food system from producer to consumer.

334-650 AGRIBUSINESS MANAGEMENT. (3 credits). A course in management and agriculture business dealing with the agribusiness firm engaged in agricultural production and marketing and related farm supply business. Focus on agribusiness organization, operation, financial management and agribusiness policy in today's complex and changing international environment.

334-660 AGRICULTURAL COMMODITY TRADING (3 credits). The mechanisms of future market operations, the economics rationale of the system, the services it provides, and the basic analytical tools needed to interpret and utilize the commodity markets. Specific commodity case histories will be used extensively. Agricultural commodities will be emphasized.

NON-MANAGEMENT ELECTIVES

Students should consult the Calendars of the Faculties of Arts & Science, and Engineering for course offerings and details.

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If undeliverable, return to:

McGill University
The Registrar's Office
845 Sherbrooke Street West
Montreal, PQ, Canada, H3A 2T5

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McGill University
Montreal

Centre for Continuing Education

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1982/1983 McGILL

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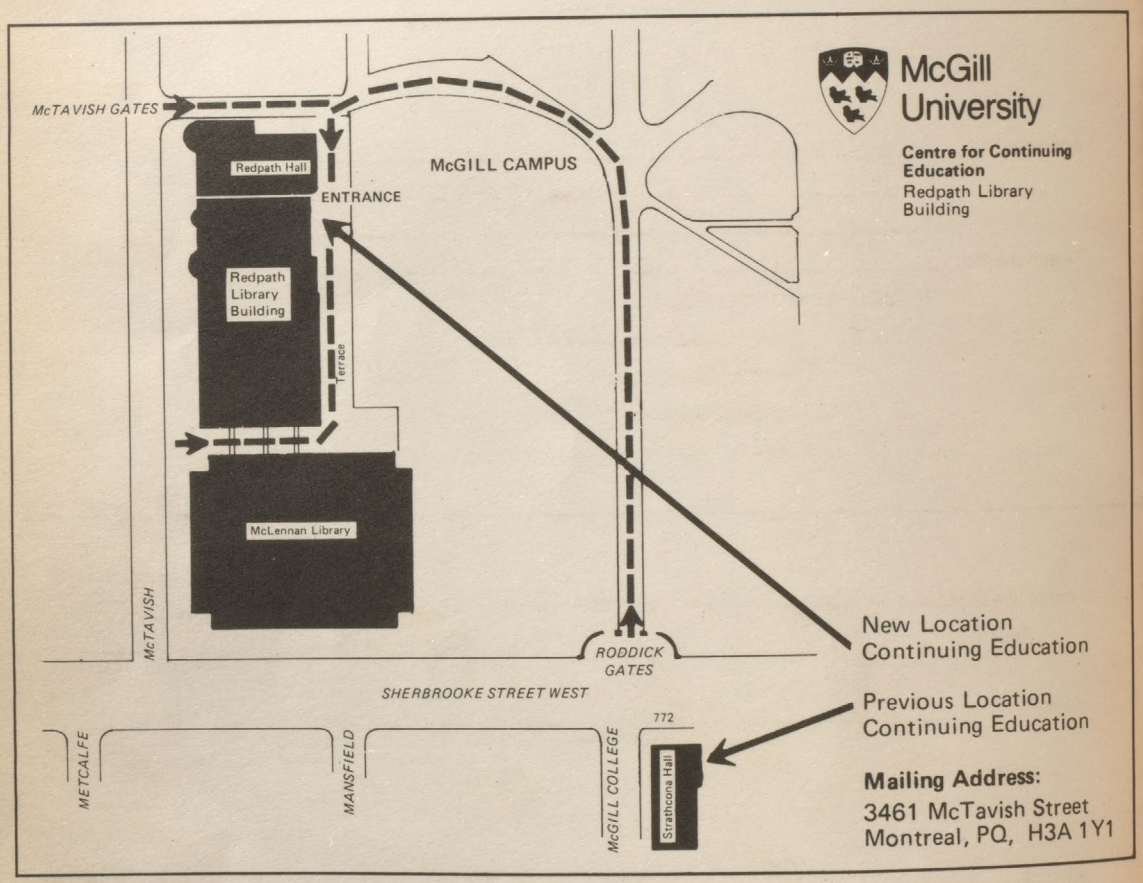

REQUEST FOR APPLICATION FORM

I would like to receive an application for admission to the following program:

- Chartered Accountancy ☐
- Diplomas in Management ☐
- Management Certificates ☐ specify program_____
- Certificate in Computer Programming ☐

Name: _____
(please print)

Address: _____

_____

_____

Telephone no. _____

RETURN TO: McGill University
Centre for Continuing Education
3461 McTavish Street
Montreal, Québec
H3A 1Y1

I would like to receive an application for admission to the following program:

Education ☐ specify program_____

Name: _____
(please print)

Address: _____

_____

_____

Telephone no. _____

RETURN TO: McGill University
Faculty of Education
Office of Part Time Studies
3700 McTavish Street
Montreal, Québec
H3A 1Y2

1982-1983 CENTRE FOR CONTINUING EDUCATION

McGill University
Montreal

Redpath Library Building
3461 McTavish Street
Montreal, PQ, H3A 1Y1
Telephone: (514) 392-5244

Registration will be on a first come first served basis.

IT IS THE RESPONSIBILITY OF EACH STUDENT TO READ, UNDERSTAND, AND ABIDE BY THE REGULATIONS AND PROCEDURES PRINTED IN THIS BOOKLET.

The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees, schedules and the revision or cancellation of particular courses.

Legal Deposit II 82

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INTRODUCTION

The Centre for Continuing Education owes its considerable growth over many years to the increased demand by the adult Montreal community for courses in the evening in the fields of Management, Languages, Education, Engineering and Liberal Arts. In addition, it provides courses and seminars designed to keep practicing professionals abreast of current developments.

The majority of lectures are held on the McGill campus in the evening although there is an increasing number being offered in off-campus locations. The Education Department even offers courses in Fort Chimo and the Gaspé in response to the needs of the anglophone school boards in those areas of the Province.

Administration Offices of the Centre are located at REDPATH LIBRARY BUILDING, 3461 McTavish Street. Office hours are 9 a.m. - 5 p.m. Monday through Friday. During registration periods, the respective departments will be closed from 9 a.m. to 1 p.m. During the academic term the INFORMATION OFFICE (Room 202) will open Monday to Thursday - 8:30 a.m. - 7:00 p.m. All Fridays - 8:30 a.m. - 6:00 p.m.

We invite you to join the more than 16,000 students who take advantage of the educational opportunities provided by the Centre.

CALENDAR FOR 1982-83 SESSION

1982

Tuesday 20 July to Wednesday 21 July	Preregistration for Education students (see Education Section 5)
Friday 30 July	Deadline for fall convocation applications for all programs, excluding C.A.
Monday 23 August to Tuesday 26 August	Registration for Management Certificate, Management Graduate, Computer Programming and Engineering students (for details of specific dates and times appropriate for each group see section 2.4)
Monday 30 August to Thursday 2 September	Registration for Chartered Accountancy, Management Certificate, Language, Engineering (other than Computer Programming) and Liberal Arts students. Late Registration. (For details on specific dates and times appropriate for each group see section 2.4).
Monday 6 September	Labour Day. All Administrative Offices closed.
Tuesday 8 September	Courses in Chartered Accountancy, Liberal Arts, Management Certificate and Management Graduate commence.
Tuesday 7 Sept. to Thursday 9 September	Registration for all students in Education programs.
Monday 13 September	Courses in Languages, Liberal Arts, Engineering Computer Programming and Education commence.
Monday 11 October	Thanksgiving Day. All Administrative Offices closed. No evening lectures.
Friday 15 October	Deadline for withdrawal (W) from X courses. Deadline for application for admission to Diploma and Certificate programs for Winter term.
Friday 12 November	Deadline for withdrawal (W) from Z courses.
Monday 22 November	Preregistration for currently registered students. (For details see Section 2.4) Final examinations for French for Professionals courses commence.
Monday 29 November	Final week of lectures for Fall courses in Chartered Accountancy, Computer Programming, Education, Engineering, Management Certificate and Management Graduate.
	Final examinations for Languages "X" courses commence, except French for Professionals.
Monday 6 December	Last week of lectures for Liberal Arts courses Last week of lectures for "Z" courses in Languages and Translation. Final examinations in Engineering and Computer Programming.
Wednesday 8 Dec. to Thursday 23 December	Final examinations in Chartered Accountancy, Management. Certificate and Management Graduate.
Thursday 23 December	All Administrative Offices close for the Christmas break.

1983

Monday 3 January	Administrative Offices reopen. "Z" courses in Languages and Translation resume.
Tuesday 4 January to Friday 7 January	Registration for all students (For details of specific dates and times appropriate for each group, see section 2.4.
Monday 10 January	Courses in all programs except Languages commence.
Monday 17 January	All other Language courses commence.
Tuesday 15 February	Deadline for application for admission to Diploma and Certificate programs for Spring term.

Friday 19 February	Deadline for withdrawal (W) from "Y" courses.
Tuesday 1 March	Deadline for convocation applications for Management Diploma program.
Tuesday, 8 March and Thursday 10 March	Translation entrance examinations
Monday 7 March	Final examinations for "Z" courses in English and French Language programs.
Monday 28 March	Final week of lectures for Computer Programming, Education and Engineering courses.
	Final examinations in Languages for "Z" courses and Functional French for Professionals courses other than English, French and Translation.
Wednesday 31 March	Deadline for Spring convocation applications for Education, Computer Programming, Languages and Management Certificate programs.
Monday 4 April	Final week of lectures in Liberal Arts, Chartered Accountancy, Management Certificate and Management Graduate courses. Final examinations in Languages Y courses except for Functional French for Professionals.
Friday 1 April	Good Friday. All Administrative Offices closed. No evening lectures.
Monday 4 April	Easter Monday. All Administrative Offices closed.
Monday 11 April	Final examinations in Chartered Accountancy, Management Certificate, Management Graduate and Translation commence.
Tuesday 5 April and Wednesday 6 April	Registration for Sping courses in Education programs.
Monday 19 April	Education courses commence.
Monday 2 May	Courses in Chartered Accountancy, Languages, Computer Programming and 1st Summer session of Management Certificate and Management Graduate commence.
Monday 23 May	Victoria Day. All Administrative Offices closed. No evening lectures.
Wednesday 15 June	Deadline for applications for admission to Diploma and Certificate programs for Fall term.
Monday 20 June	Final week of lectures in Education. Final examinations in Management Graduate program. Final examinations in Languages courses commence.
Friday 24 June	La Fête Nationale du Québec. All Administrative Offices closed. No evening lectures.
Friday 1 July	Canada Day. All Administrative Offices closed. No evening lectures.
Monday 12 July	Final examinations in Chartered Accountancy.

1 ADMINISTRATIVE OFFICERS

UNIVERSITY

DAVID L. JOHNSTON, A.B.(Harv.), LL.B.(Cantab. & Queen's), LL.D. (L.S.U.C.)
Principal and Vice-Chancellor

S.O. FREEDMAN, B.SC., M.D., C.M. (McG.), F.R.C.P.(C), F.A.C.P., F.R.S.C.
Vice-Principal (Academic)

JOHN ARMOUR, AACCA **Vice-Principal (Administration and Finance)**

E.J. STANSBURY, B.A., M.A., Ph.D.(Tor.)
Vice-Principal (Planning and Academic Services)

GORDON MACLACHLAN, B.Sc., M.A. (Sask.), Ph.D.(Man.) **Vice-Principal (Research)**

L.E. LLOYD, B.Sc.(Agr.), M.Sc., Ph.D.(McG.)
Vice-Principal (Macdonald College)

CENTRE

J. ALISTAIR DUFF, B.A., M.A.(Cambridge), C.A.
Director, Centre for Continuing Education

EDWARD BURNETT, B.A.(S.G.W.), M.Sc.(McG.), D.Ed.(McG.) **Associate Director (Management Certificate Programs)**

SHIRLEY CHARRON **Administrative Assistant (Languages)**

GIOVANNA CUCCHIARA **Administrative Assistant**

PETER G. CUNNINGHAM, C.A. **Assistant Director**

WILLARD H. ELLIS, B.A.(Queen's), M.B.A.(W. Ontario) **Associate Director (Management Graduate)**

ROSA GRECO-PEPE, B.A.(Conc.)
Administrative Assistant (Management Graduate)

JANE HOLLANDER, B.S.Ed. (N.J.State) B.A. (Bishop's) **Co-ordinator (Liberal Arts)**

CLAUDETTE LAPIERRE **Administrative Assistant (Management Certificate Programs)**

Wm. LAWLOR, B.Com., B.Ed.(Montr.), M.A., Ph.D.(Ottawa) **Associate Director (Education)**

VIVIENNE M. LIVICK, B.Com. (Montr.), M.B.A. (S.G.W.), C.A. **Associate Director (Chartered Accountancy)**

MARY-JO McCULLOGH, B.A.(McG.)
Administrative Assistant (Chartered Accountancy)

PATRICIA MARTIN
Administrative Assistant (Education)

PAMELA D. STEWART, B.A.(Montr.), M.A.(McG.)
Associate Director (Languages)

NINA S. ZIMMER **Coordinator, Academic Services**

2 GENERAL INFORMATION

2.1 ADMISSION – CERTIFICATE AND DIPLOMA PROGRAMS

Students wishing to follow a Certificate or Diploma Program must complete and APPLICATION FOR ADMISSION. This does not apply to students wishing to take Certificate or Diploma programs in the Languages Department. For details of the procedure to be followed and fees, see information section of the respective Departments.

Students who fail to register within a year of admission to a program, are deemed to have withdrawn and are required to apply for readmission.

2.2 PROGRAMS

2.2.1 The Centre for Continuing Education offers programs in the following fields:

COMPUTER SCIENCE

Certificates in	Responsible Dept. & Section Reference
– Computer Programming	Management/4.1
– Management Information Systems	Certificate /9.7.6

EDUCATION

– Bachelor of Education for Certified Teachers (Elementary Education)	Education/5.5.1
– Bachelor of Education (Vocational Education)	/5.5.2
Diplomas in	
– College Teaching	Education/5.5.3
– Education and Psychology of the Gifted	" /5.5.4
– Educational Administration	" /5.5.5
– Human Relations and Family Life Education	" /5.5.6
Certificates in	
– Diagnostic and Remedial Mathematics	Education/5.5.7
– Educational Media	" /5.5.8
– Moral and Religious Education	" /5.5.9
– Native and Northern Education	" /5.5.10
– Reading Instruction	" /5.5.11
– 2nd Language Teaching	" /5.5.12
– Social Studies Education	" /5.5.13
– Special Education	" /5.5.14

ENGINEERING

- Master of Engineering, Power Systems Option	Engineering/6.14

LANGUAGES

Diploma in

- Translation	Languages/7.2.4

Certificates of Proficiency in

- English	Languages/7.2.1
- French	" /7.2.1
- German	" /7.2.2
- Italian	" /7.2.2
- Russian	" /7.2.2
- Spanish	" /7.2.2
- Translation	" /7.2.3

MANAGEMENT

- Master in Business Administration (part time)	Management Graduate/10.2, 10.3
- Bachelor of Commerce (part time)	Management Certificate/9.8
- Graduate Diploma in Public Accountancy	Chartered Accountancy/3.1

Diplomas in

- Management	Management Graduate/10.4
- Management (Tourism)	" /10.5

Certificates in

- Accounting	Management Certificate/9.7.1
- Banking Administration	" /9.7.2
- Business Communications	" /9.7.3
- Health and Social Services Management	" /9.7.4
- Management	" /9.7.5
- Management Information Systems	" /9.7.6
- Management (Insurance Brokerage)	" /9.7.7
- Management (Retail)	" /9.7.8
- Marking	" /9.7.9
- Personnel	" /9.7.10
- Real Estate Analysis	" /9.7.12
- Real Estate Appraisal	" /9.7.11
- Transportation	" /9.7.13

2.2.2 EXTERNAL ORGANIZATIONS. In addition the Centre offers courses recognised by outside bodies for accreditation towards their own programs, in the following fields:

ACCOUNTANCY

Institute of Internal Auditors	Management Certificate/9.9.17
La Corporation Professionnelle des Comptables Généraux Licenciés du Québec (C.G.A.)	" /9.9.11
La Corporation Professionnelle des Comptables en Administration Industrielle du Québec (R.I.A.)	" /9.9.14
Ordre des comptables Agréés du Québec (C.A.)	Chartered Accountancy/3.2

BANKING

Institute of Canadian Bankers	Management Certificate/9.9.15

COMPUTERS

Association for Systems Management	Management Certificate/9.9.4

EDUCATION

Ministry of Education

- Program for Kindergarten Specialists	Education/5.5.15

INSURANCE

Insurance Brokers' Association of the Province of Québec	Management Certificate/9.9.18
Insurance Institute of Québec	" /9.9.19
Québec Risk and Insurance Management Association	" /9.9.23

MANAGEMENT

Administrative Management Society	Management Certificate/9.9.1
Association des Professionnels en Ressources Humaines du Québec	" /9.9.3
Association of Professional Placement Agencies and Consultants	" /9.9.5
Canadian Association of Physical Distribution Management	" /9.9.6
Canadian Credit Institute	" /9.9.7
Canadian Institute of Management	" /9.9.8
Canadian Institute of Traffic and Transportation	" /9.9.9
Canadian Public Relations Society (Québec)	" /9.9.10
La Corporation Professionnelle des Administrateurs Agréés du Québec (C. Adm.)	" /9.9.12
Institute of Chartered Secretaries and Administrators	" /9.9.16
International Association of Business Communicators	" /9.9.20
Project Management Institute (Montreal Chapter)	" /9.9.22
Trust Companies Institute of Canada	" /9.9.25

REAL ESTATE

Appraisal Institute of Canada	Management Certificate/9.9.2

Corporation Professionnelle des Évaluateurs Agréés du Québec (C. App.)	" /9.9.13
Le Ministère des Affaires municipales du Québec	" /9.9.21
Real Estate Institute of Canada	" /9.9.24

2.2.3 Courses are also offered on a general interest basis in all departments of the Centre.

2.3 EVALUATION OF TRANSCRIPTS

Students may have transcripts evaluated for acceptance into a program and/or for credits and exemptions within a program. A fee of $15.00 (non-refundable) is payable for evaluation of non-McGill transcripts.

However where an Application for Admission Fee has been paid no further fee for evaluation is required.

2.4 REGISTRATION

The following information refers to the Centre as a whole. Registration must be made in person or by proxy during the official registration periods listed below. Returning students must show proof of their student number at time of registration including course approval if applicable. All new students admitted to programs must present letter of acceptance at time of registration.

Faculty authorization is necessary for students in degree programs wishing to take evening courses for credit. This authorization must be obtained prior to the third lecture of the course. Students must register both with their faculty and the Centre for Continuing Education.

DEPARTMENTAL OFFICES WILL BE CLOSED DURING THEIR RESPECTIVE REGISTRATION PERIODS FROM 9:00 A.M. TO 1:00 P.M.

REGISTRATION – FALL 1982 (UNIVERSITY CENTRE, 3480 McTAVISH STREET)

MONDAY 23 AUGUST

9:00 am To 7:00 pm

MANAGEMENT CERTIFICATE
All B. Com. Students (Full Time/Part Time)
All returning students admitted to certificate Programs

COMPUTER PROGRAMMING
All returning students admitted to Certificate Program

12:00 noon To 7:00 pm

MANAGEMENT GRADUATE
All MBA 1/11 students

TUESDAY 24 AUGUST

9:00 am To 7:00 pm

MANAGEMENT CERTIFICATE
All returning students admitted to Certificate Programs

MANAGEMENT GRADUATE
All returning students admitted to Diploma Programs

COMPUTER PROGRAMMING
All returning students admitted to Certificate Program

12:00 noon To 7:00 pm

MANAGEMENT CERTIFICATE
All newly admitted students to Certificate Programs

COMPUTER PROGRAMMING
All newly admitted students to Certificate Program

WEDNESDAY 25 AUGUST

9:00 am To 7:00 pm

MANAGEMENT CERTIFICATE
All newly admitted students to Certificate Programs

COMPUTER PROGRAMMING
All newly admitted students to Certificate Program

MANAGEMENT GRADUATE
All newly admitted students to Diploma Programs

THURSDAY 26 AUGUST

9:00 am To 7:00 pm

MANAGEMENT CERTIFICATE
All returning & new students in programs with external associations (for listing of Associations see Section 9.9)

MANAGEMENT GRADUATE
All other returning & new students

ENGINEERING
All returning & new students in Electrical Engineering/ General Courses

MONDAY 30 AUGUST

9:00 am To 7:00 pm

MANAGEMENT CERTIFICATE
All other returning & new students

ENGINEERING
All returning & new students in Electrical Engineering/ General Courses

LANGUAGES
All returning students

New students - English Levels 1, 2, & 3

12:00 noon To 7:00 pm

MANAGEMENT GRADUATE
Late Registration

TUESDAY 31 AUGUST

9:00 am To 7:00 pm

LANGUAGES
New students - English Levels 4 & 5

All Translation

12:00 noon To 7:00 pm

MANAGEMENT CERTIFICATE
ENGINEERING
MANAGEMENT GRADUATE
COMPUTER PROGRAMMING
Late Registration

WEDNESDAY 1 SEPTEMBER

9:00 am To 7:00 pm

LANGUAGES
New students - French Levels 1—5

All Foreign Languages

12:00 noon To 7:00 pm

CHARTERED ACCOUNTANCY
All Returning Students

LIBERAL ARTS
All students

MANAGEMENT CERTIFICATE
MANAGEMENT GRADUATE
ENGINEERING
COMPUTER PROGRAMMING
Late Registration

THURSDAY 2 SEPTEMBER

12:00 noon To 7:00 pm

CHARTERED ACCOUNTANCY
Newly Admitted Students

LANGUAGES
All Students

LIBERAL ARTS
All Students

MANAGEMENT CERTIFICATE
MANAGEMENT GRADUATE
ENGINEERING
COMPUTER PROGRAMMING
Late Registration

Education **(EDUCATION BUILDING, FOYER, 3700 McTAVISH ST.)**

All Students	Tuesday, 7 September to Thursday, 9 September	12:00 noon - 7:00 p.m.

LATE REGISTRATION

A $10.00 flat charge for late registration (non-refundable) is subject to places being available in the course(s). Registration after the second lecture will only be permitted in exceptional circumstances at the discretion of the Department.

Late registrations for: MANAGEMENT GRADUATE,
MANAGEMENT CERTIFICATE,
COMPUTER PROGRAMMING
AND ENGINEERING
Will take place at: UNIVERSITY CENTRE 3480 McTAVISH STREET. No registrations will be accepted after 2 September 1982.

Late registrations for: CHARTERED ACCOUNTANCY,
LANGUAGES,
AND LIBERAL ARTS
Will take place at: CENTRE FOR CONTINUING EDUCATION, REDPATH LIBRARY BUILDING, 3461 McTAVISH STREET TUESDAY 7 SEPTEMBER TO FRIDAY 10 SEPTEMBER - 10:00 a.m. to 4:00 p.m.

NOTE: The University reserves the right to restrict registration in any class, to make substitutions or additions to the published list of instructors and to cancel any class for which an insufficient number of registrations has been received.

PREREGISTRATION WINTER 1983 (UNIVERSITY CENTRE, 3480 McTAVISH STREET)

Preregistration for January courses in a privilege extended only to returning students in courses with the Centre for Continuing Education. Preregistration may be done in person or by proxy during the period listed below:

Computer Programming - Admitted Students **Languages** **Management Certificate -** Admitted Students **Management Graduate -** Admitted Students	Monday 22 November & Tuesday 23 November	9:00 a.m. - 6:00 p.m.
Chartered Accountancy - Admitted Students	Tuesday 23 November	9:00 a.m. - 6:00 p.m.

REGISTRATION – WINTER 1983 (UNIVERSITY CENTRE, 3480 McTAVISH STREET)

TUESDAY 4 January

9:00 am To 7:00 pm

MANAGEMENT CERTIFICATE
All returning & new students admitted to Certificate Programs

MANAGEMENT GRADUATE
All returning & new students admitted to Diploma Programs

COMPUTER PROGRAMMING
All returning & new students admitted to Certificate Program

12:00 noon To 7:00 pm

CHARTERED ACCOUNTANCY
All returning & new students

WEDNESDAY 5 JANUARY

9:00 am To 7:00 pm

MANAGEMENT CERTIFICATE
All returning & new students admitted to Certificate Programs

MANAGEMENT GRADUATE
All other returning & new students

LANGUAGES
All students in English/French Levels — 1, 2, & 3

All Foreign Languages

COMPUTER PROGRAMMING
All returning & new students admitted to Certificate Program

12:00 noon To 7:00 pm

CHARTERED ACCOUNTANCY
All returning & new students

THURSDAY 6 JANUARY

9:00 am To 7:00 pm

MANAGEMENT CERTIFICATE
All returning & new students in programs with external associations (for listing of Associations see Section 9.9)

LANGUAGES
All students in English/French Levels — 4 & 5

All Foreign Languages

12:00 noon To 7:00 pm

MANAGEMENT CERTIFICATE
All other returning & new students

ENGINEERING
All returning & new students in Electrical Engineering/ General Courses

COMPUTER PROGRAMMING
All other returning & new students

LIBERAL ARTS
All students

FRIDAY 7 JANUARY

9:00 am To 4:00 pm

MANAGEMENT CERTIFICATE
All other returning & new students

LANGUAGES
All students

ENGINEERING
All returning & new students in Electrical Engineering/ General Courses

COMPUTER PROGRAMMING
All other returning & new students

Education **(EDUCATION BUILDING, FOYER, 3700 McTAVISH STREET)**

All Students	Tuesday, 4 January & Wednesday 5 January	12:00 noon - 7:00 p.m.

NOTE: The University reserves the right to restrict registration in any class, to make substitutions or additions to the published list of instructors and to cancel any class for which an insufficient number of registrations has been received.

2.5 FEES

The fees indicated for each course are payable at time of registration. Students who have applied and been accepted before the date of registration into formal programs qualifying for government grants will be charged $19.00 per credit. All non-Canadian students registering for evening courses are subject to additional fees. For further details request the appropriate "NON-CANADIAN STUDENT FINANCIAL INFORMATION" sheet at time of registration. (see section 2.11.2)

SPECIAL FEES AND PENALTIES

Application for Admission (for new students only)	$15.00
Late registration	$10.00 (non refundable)
Application for Graduation Fee	$25.00
Duplicate diploma	$15.00
Certified transcript of students'record:	
First copy with each order	$ 2.25
Additional copies, made at same time each	.75
Re-reading examination paper	$25.00
Changes in course, each change after specified change of course period	$ 5.00
Supplemental	$25.00
Refunds	$10.00 (see refunds)
Transfers	$ 5.00 (see transfers)
Instalment on fees	$5.00 (with special permission)
Returned or Void Cheques	$10.00 (penalty fee)
Duplicate Student Card	$ 2.00
Duplicate Income Tax Receipt	$ 2.00

The Centre for Continuing Education is not responsible for any fees payable to an external association or institute.

2.5.1 CANCELLED COURSES

When a course is cancelled by the Centre for Continuing Education (whether due to insufficient registrations or not) students will be entitled to a full refund of course fees paid. Presentation of the student card is necessary for the claim and must be made within one month of the cancellation of the course.

2.5.2 SENIOR CITIZENS

Senior citizens may register for courses offered by the Centre upon payment of 20% of the course fee indicated.

Courses having LIMITED registration will only be available to Senior Citizens AFTER the final date of registration when enrolment numbers have been determined. A late registration fee will not be charged in the case of limited classes.

2.5.3 TRANSFERS

Students may transfer from one class to another prior to the date of the third lecture in both courses, provided that registration for the new course is still open. A charge of $5.00 will be made for a transfer from one course to another or from one section of a course to another section. ***Students who do not comply with this policy are subject to a $10 penalty charge. A mark of 'J' will be processed until this transfer is made.*** A transfer cannot be made by speaking to the instructor or telephoning the Centre; the student must bring his Student Card of Admission and course information card to the Centre.

Transfers will not be processed during the official registration periods.

2.5.4 WITHDRAWALS

Ceasing to attend a class or notifying the lecturer does not constitute a withdrawal, nor can telephone calls be accepted as notification of withdrawal. A student is held responsible for all curses in which he registers unless the officially withdraws in writing and returns his student card. A student withdrawing prior to the 3rd lecture in the course may obtain a refund (as 2.5.5 below) and no registration will appear on the academic record. Withdrawals prior to the deadline date will appear as a "W" on the academic record, but no refund will be given. After the following dates, students who do not complete the course will receive a grade of "J" which constitutes a failure.

X courses (Fall term)	15 October 1982
Y courses (Winter term)	18 February 1983
Z courses (two-term courses)	12 November 1982

The Associate Director may under exceptional circumstances grant permission for a student to withdraw from a course after the deadline and to receive a "W".

In order to conform with faculty regulations, daytime students registered in evening courses who wish to withdraw, must do so both with the Faculty and the Centre for Continuing Education within the time period stipulated by their Faculty.

2.5.5 REFUNDS

To obtain a refund, the Student Card of Admission, library card, course information card and any material handed out in class must reach the Centre for Continuing Educaton before the third lecture in the course is given; this can be done by mail or in person. A refund, less $10.00 per course, will be mailed within 4 weeks. No refund will be made to a student who registers after the third lecture in a course.

Refunds will not be processed during the official registration periods.

Allowances cannot be made for a change of personal plans including transfer from Montreal or for additional commitments which a student may accept after arranging his course schedule.

2.5.6 INCOME TAX RECEIPTS

Official receipts for income tax purposes will be mailed in February of each year to all students. Receipts will be mailed to the address on record and students are urged to inform the Centre in writing of any change of address.

For all Education students, receipts will be mailed by the Registrar's Office.

2.5.7 CHANGE OF ADDRESS

Students should inform the Centre in writing of any change of address and telephone number. The student's number and course number(s) must be indicated.

2.6 CONVOCATION

A Spring Convocation of the Centre for Continuing Education is held for students who have successfully completed the following programs of study:

Diploma in Translation; Certificates of Proficiency in English, French, German, Italian, Russian, Spanish, Translation; Certificates in Management and Computer Programming.

Applications must reach the Centre by 31 March with a cheque for $25.00 made payable to McGill University; from 31 March until 30 April an additional $5.00 late fee will be charged and any applications received after 30 April will not be accepted for Spring Convocation in that year.

Students receiving Education Certificates or Diplomas MUST contact the appropriate department of the Faculty of Education prior to 31 March.

Students in the Bachelor of Commerce (Part Time) and Diploma in Management graduate at the Spring Convocations of the Graduate Faculty and Faculty of Management respectively. For further details, please contact the respective departments.

Students in the Graduate Diploma in Public Accountancy convocate with the Faculty of Graduate Studies in the fall.

A University-wide Fall Convocation is held in November. Students graduating at this Convocation must have submitted their applications by 30 July. With the exception of Education students, who must apply to their department in the Faculty of Education, all other students must apply to their respective departments at the Centre for Continuing Education.

Second diploma and/or certificate received at the same convocation are subject to an additional fee of $5.00.

2.7 HONOURS & AWARDS

The Centre for Continuing Education recognises students who have achieved a high academic

standing in their program by naming them to the Academic Achievement List. The formal recognition takes place at Convocation and is recorded on all transcripts issued.

THE CONSOLIDATED BATHURST PRIZE is awarded to the student with the best academic record in the Diploma in Management. In addition to the recognition of academic excellence a sum of $200.00 is paid to the recipient.

THE CANADIAN PACIFIC LIMITED PRIZES are awarded to the two students in the Diploma in Management (Tourism) program whose academic records are judged to be outstanding among those who complete the Diploma. The prizes are of $250 each.

McGILL ASSOCIATES PRIZES have been established in the Translation Program of the Languages Department.

THE KENNETH F. BYRD AND C. DOUGLAS MELLOR PRIZES are awarded to two students in the Graduate Diploma in Public Accountancy whose academic records are judged to be outstanding among those who graduate during the academic year. In addition to the recognition of academic excellence a cash award will be paid to the recipients. These awards have been sponsored by Montreal-based Chartered Accountancy firms.

2.8 COURSE INFORMATION

2.8.1 CANCELLATION OF LECTURES

Lectures are cancelled by the Centre in cases of emergency. Decisions dependent on weather conditions are not normally made until 1 p.m. on the day of lectures. Cancellations for CONTINUING EDUCATION courses will be announced over the radio (stations CJAD, CBM, CFCF & CKGM) whenever possible. In such cases lectures will be made up at a time mutually convenient to the students and lecturer.

2.8.2 CREDITS AND CONTINUING EDUCATION UNITS (CEU's)

All courses included in formal programs of the University (Degrees, Diplomas and Certificates) are allocated a credit rating. These courses are approved by the Academic Policy and Planning Committee of Senate for inclusion in the programs. However, students may not count such courses towards the fulfilment of a program unless:

i) they have been formally admitted to the program;

and ii) the specific course has been approved for inclusion in their program by the Associate Dean of a relevant faculty or an Associate Director of the Centre for Continuing Education.

Other courses at the Centre may carry a Continuing Education Unit rating. These courses do not normally count towards the fulfilment of a program. However under specific circumstances an Associate Dean or Associate Director may approve a course for inclusion, at which time the credit rating will be identified.

A Continuing Education Unit is a measure of the number of hours of participation - contact and/or study - in an organised Continuing Education activity. One CEU represents ten hours of participation.

2.8.3 CLASSES WITH LIMITED ENROLMENT

The Centre reserves the right to limit the size of classes on academic grounds or due to constraints of physical facilities. In all such cases enrolment is on a "first come, first served" basis, with preference bring given to students formally enrolled in certificate, diploma and degree programs in the Centre.

2.8.4 NON-EVALUATED WORK

Students attending courses which would normally involve an evaluation process, whether based on an examination or anyother criteria, may themselves elect not to be evaluated. This request must be made in writing by completing the required form prior to the commencement of the third lecture and will result in a mark of "NC/NE" being placed on the academic record. In no circumstances will a course attended on this basis be accepted as recognition towards a certificate, diploma or degree program.

2.8.5 NOTICE BOARD

Students should consult the Continuing Education notice board in the building in which their classes are held for information regarding their courses.

2.8.6 SEMINARS

Seminars are offered by the various departments from time to time to help students in their respective fields. Information concerning seminars will be published when available.

The Centre is pleased to cooperate with individuals or associations in the presentation of seminars in their field of interest.

2.8.7 SMOKING

Smoking is strictly for bidden in all classrooms at all times.

2.8.8 TIMETABLES

A schedule of rooms and buildings will be handed out to all students at time of registration. A master list will be posted on the notice board in the Centre and will also be found on the Continuing Education notice boards in all buildings. In-

formation on buildings and room numbers will not be given over the telephone.

2.8.9 DAY COURSES NOT ADMINISTERED BY THE CENTRE FOR CONTINUING EDUCATION

Students may receive permission from their department to register in a day course for credit towards their program. Courses will not be recognized for credit if they have not received prior written approval. In order to receive permission to register for a day course, students must –

1) Be formally registered in a particular program.

and 2) Supply proof that they have satisfied all prerequisites.

Students must ensure that the special authorization form has been completed and signed by the department. Students must abide by all regulations of the Centre, and NOT those of the faculty where the course is taken. Students wishing to Transfer or obtain a Refund from at day course must do so before the 6th lecture.

Students should be aware that some faculties do not offer supplemental examinations. This means that any failed course must be repeated at the Centre.

2.9 STUDENT RECORDS

2.9.1 EXAMINATIONS

An evaluation process is available in most courses. Examinations may be written in English or French. Students will be notified by mail of their results.

Result will be posted in the Centre three to four weeks after the date of the final examination. No examination results will be given by telephone.

Students are required to present their student card of admission at all examinations.

Students who are seeking credit towards a Diploma or Certificate and who are unable to write the final examination for reasons of health must submit a medical certificate to the Centre.

Students are reminded that cheating or any other breach of University examination regulations is considered a serious offence which could lead to expulsion from the University.

2.9.2 DEFERRED EXAMINATIONS

Examinations are an integral part of the students' evaluation and only in exceptional circumstances will reasons other than serious illness (supported by medical evidence) be accepted for deferment. Immediately the circumstances justifying the deferral are known a request must be made to the department (not the lecturer) concerned. Deferred examinations must normally be written at the first available opportunity.

2.9.3 GRADING SYSTEM

The Centre uses the grading system common to the University. Certain programs have further requirements. Students should refer to the information on their program.

Unless otherwise noted the grading will be as follows:

GRADUATE LEVEL		UNDERGRADUATE LEVEL		
A (85-100%)		A (85-100%)		
A– (80-84%)		A– (80-84%)		
B+ (75-79%)	Pass	B+ (75-79%)		
B (70-74%)		B (70-74%)		Satisfactory Pass
B– (65-69%)		B+ (65-69%)		
F (0-64%)	**Failure**	C+ (60-64%)		
P	Pass	C (55-59%)		
		C (55-59%)		
		* D (50-54%)		Conditional Pass
		F (0-49%)		Failure
		P		Pass

The above grading scheme took effect in September 1980. This new scheme discriminates more finely within the old ranges, and with one exception (the lower limit for the classification D has been raised from 45% to 50%), the parameters for each classification have remained unchanged.

CR	CREDIT GRANTED	A student admitted to a program receives credit for the course based on previous qualifications, resulting in fewer credits or courses necessary for completion of the program.
EX	EXEMPTION GRANTED	A student admitted to a program is exempted from the particular course but must substitute another to obtain the requisite credits.

J	ABSENT, FAILURE	A student registered but does not write the examination or complete other essential work for which he has no valid reason.
K	INCOMPLETE	A student has valid reasons for not having completed essential term papers or research. If required work is not completed this reverts to a "J" after one month of posting of marks.
L	DEFERRED	A student's final examination has been deferred with approval of the associate director.
NC/NE	NON EVALUATED WORK	Indicates work for which no evaluation has been carried out and which may not count as credit towards any program.
W	WITHDREW	Withdrawal from a course within the requisite time period or with permission of the associate director. (see section 2.5.4)

*Although D is a passing grade, it will not permit entry into a subsequent course for which it is a prerequisite, nor will it be recognized if the course is a requisite for the student's program.

2.9.4 PLAGIARISM

In submitting work in their courses, students should remember that plagiarism is considered to be an extremely serious offence. If a student has any doubt as to what might be considered "plagiarism" in preparing an essay or term paper, he or she should consult the instructor of the course to obtain appropriate guidelines.

2.9.5 REREADS

Students may request verification of marks. This ensures that all questions have been marked, calculations carried out correctly and class work adequately counted toward the final evaluation.

If dissatisfied, a student may also request a formal reread of his final examination. The reread request form together with a cheque for $25.00 payable to McGill University, must be completed within 10 working days of the posting of the final mark at the Centre.

Students are eligible to receive a refund if the letter grade is raised or if the mark is changed from a fail to a pass. The mark resulting from the reread becomes the official mark for the course.

2.9.6 TRANSCRIPTS

Transcripts of record, if required, must be requested by the student and are released only with the permission of the student upon written request. The fee is $2.25 for the first transcript and $.75 for each additional transcript provided the order is given at one time. Students may not receive official transcripts which must go directly to the institutions concerned. One copy stamped "For Student's Use Only" will be sent to the student with each new request.

The University will only issue complete transcripts recording all work attempted and results obtained in each and every program; partial transcripts will not be issued under any circumstances.

Students are reminded that it takes two weeks, from the date of request, to process a transcript.

Please note that transcripts for courses and programs taken in the B.Com. and M.B.A. programs and in the Education Department are issued by the University's Transcript Office and not be the Centre for Continuing Education.

2.10 LANGUAGE REQUIREMENT FOR PROFESSIONALS

The law of Québec requires that candidates seeking admission to professional corporations possess a working knowledge of the French language, that they be able to communicate orally and in writing in that language and that they possess the knowledge and ability to use the French terminology of the profession.

To demonstrate this capability, a candidate will be required to pass an examination set by the Office de la langue française, unless he or she can show that three years of instruction in a French post-primary school have been completed. The professional corporation will require this proof of attendance or of successful completion of the Office examination.

The Office evaluates candidates in relation to five criteria: oral French comprehension and expression, written French comprehension and expression, and the ability to use the French terminology of the profession. The contents of the examination may vary in accordance with the communicative needs and requirements of each profession or professional group.

Examinations take place as frequently as the demand indicates and may be attempted an unlimited number of times although a waiting period of 90 days is required between attempts.

The examination may be attempted by registered students during the two years prior to the date they receive a degree giving access to a professional corporation. Arrangements for sitting the exam while still a student must be made through the Faculty, School or Program in which you are enrolled.

Information may be obtained from the Office de la langue française, Tour de la Bourse (Place Victoria), 15e étage, Montréal, Québec H4Z 1G8, Telephone 873-8361.

Students who need to acquire a functional level of proficiency in French may register in courses either with the Centre for Continuing Education, 3461 McTavish Street (Telephone 392-8301) for courses in the evening, or at the French Language Centre, 3438 McTavish Street (Telephone 392-5727) for courses during the day.

Candidates who wish to as certain their level of proficiency in French may do so by taking the Classification Test held by the Languages Department (see Languages Section 7.3).

For those who have scored an intermediate or advanced level on the Classification Test, evening courses will be offered from time to time in Functional French for Professionals by the Languages Department, Telephone 392-8301.

Students already proficient in French but who wish to keek up practice may register in courses at the Department of Rench Language and Literature, 3460 McTavish Street, Telephone 392-4577, or at the Centre d'études canadiennes-françaises, 3475 Peel Street, Telephone 392-5200.

McGill degrees and diplomas currently give access to corporations regulating the activities of the following professional groups:

Advocates
Agrologists
Architects
Certified General Accountants
Chartered Accountants
Chartered Administrators
Chartered Appraisers
Chemists
Dentists
Dietitians
Engineers
Industrial Relations Counsellors
Notaries
Nurses
Occupational Therapists
Physicians
Physiotherapists
Psychologists
Registered Industrial Accountants
Social Workers
Speech Therapists & Audiologists
Urbanists
Vocational Guidance Counsellors

The Centre for Continuing Education offers programs giving access to the following professions:

Certified General Accountants
Chartered Accountants
Chartered Administrators
Chartered Appraisers
Registered Industrial Accountants

2.11 NON-CANADIAN STUDENTS

2.11.1 STUDENT VISAS

Foreign students are reminded that in order to study at McGill they are required to obtain a "student authorization" (visa) from the Canadian immigration authorities. This, in turn, can be issued only after a "certificate of acceptance" has been obtained from the Quebec immigration authorities. Initial application for a "student authorization" may not be made within Canada, although subsequent renewals may be made within the country.

For acceptance into a program students should apply to the department at the Centre for Continuing Education in whose program they are interested. Together with the application forms for the program they will receive more specific details about the procedures necessary for applying for student visas.

The Centre for Continuing Education is only allowed to accept students into its own academic programs. This acceptance does not of necessity entitle a student to a "certificate of acceptance" or "student visa" which are issued at the sole discretion of the respective immigration authorities, nor does it permit a student to work within Canada, for which a separate "work permit" is required. Prospective students should note that immigration authorities need proof of access to sufficient funds to support themselves for the period of their studies, before acceptance will be granted.

2.11.2 STUDENT TUITION FEES

As of September 1981 non-Canadian students (except for landed immigrants and students who qualify on the basis of very specific exemptions e.g. refugees, diplomatic corps, etc) will be subject to fees on a sliding scale, as follows:

i) for students taking credit courses in formal programs, who commenced the program prior to September 1981 the fees will be $116.70 per credit. For the majority of one term and two term courses this will result in fees of $350 and $700 respectively;

ii) for students taking credit courses in formal programs, who commence the program on or after September 1981 the fees will be $145 per credit. For the majority of one term and two term courses

this will result in fees of $435 and $870 respectively;

iii) for students taking non-credit courses, the fee will depend on the initial price of the course, but will generally be approximately 20% in excess of the fee quoted.

The above outlines in very general terms the fees payable by foreign students. For specific details of the actual fees payable and conditions under which students are exempt from differential fees please contact the department responsible for the program in which you are interested.

2.11.3 INTERNATIONAL STUDENT MEDICAL INSURANCE

Students who are neither "Canadian citizens" nor "landed immigrants in Canada" are not normally covered by the Government Medical Benefit Plan. These students would therefore be personally responsible for any medical costs incurred (these can amount to at least $450.00 a day for hospital fees alone).

McGill offers a medical plan for all foreign students. It is compulsory for all day time students but students in the Centre are *very strongly advised* to register in this plan *immediately* upon arrival at McGill. They should contact the Dean of Students Office, 3637 Peel Street, (room 211), telephone 392-4551. Coverage is $138.00 per year for individuals, $269 for dependants (spouse and dependent children) and is prorated for partial years.

Students are well advised to make use of this plan as medical costs are extremely expensive.

Note: Rates quoted are subject to change.

2.12 UNIVERSITY SERVICES

2.12.1 BOOKSTORE

In addition to the regular hours the Bookstore is open in the early evening at the commencement of classes. Specific details of days and times will be available at registration.

2.12.2 HANDICAPPED STUDENTS

The Office of the Dean of Students acts as the coordinating centre for any special support services required by a student with a temporary or permanent physical disability. Location: 3637 Peel Street, tel. 392-4551.

2.12.3 LIBRARIES

Students registered in the Centre for Continuing Education may be registered for library privileges within the McGill University Libraries System upon presentation of their current Continuing Education student admission card (duly completed and signed), at the circulation desk of McLennan Library. Dates of eligibility for borrowing, and expiry dates are determined by course dates. It is necessary to have a McGill Libraries card to obtain privileges throughout the system. Policies differ in the various McGill libraries; rules in effect in individual libraries must be observed. Access to McLennan Library for study on Sundays, is obtained *only* on presentation of the McGill Libraries card.

Borrowing privileges, marks and transcripts may be with held and re-registration prevented for students with outstanding library fines. For further information, please call McLennan Library Circulation Department at 392-4936.

NOTE: By agreement with the Order of Chartered Accountants of Québec, members and students of the Order are eligible for borrowing privileges at the Howard Ross Library of Management on presentation of the membership card issued by the Order. However, students registered in the C.A. program at McGill should follow the normal procedures noted above.

2.12.4 LOANS & BURSARIES

A PROFESSOR HERBERT TATE LOAN FUND has been established. Special consideration will be given to students who, like the donor, began university education as mature students and require financial assistance.

For this and other loans and bursary information please contact the Student Aid Office, Powell Student Services Building, 3637 Peel Street. Telephone 392-5256.

2.12.5 PARKING

Parking facilities are limited. Students may park in the garage of the McIntyre Medical Sciences building (entrance on Peel Street) on presentation of their student card and payment of $1.50 for the evening. When available, parking is permitted on the Campus after 5 p.m. on payment of $3.50 for the evening.

The above rates are subject to change.

2.12.6 STUDENT SERVICES

Certain qualifying students are entitled to the use of student services other than those mentioned above. Students are eligible if they are enrolled in four or more courses per term and pay the full Student Services fees. Students should note that the majority of these services are available only during normal working hours and are not available during the Summer Session.

For further details please contact the respective departments.

2.12.7 UNIVERSITY CENTRE

The University Centre is located at 3480 McTavish Street. Full food and beverage services are available to Continuing Education students in the evenings.

3 CHARTERED ACCOUNTANCY

Vivienne M. Livick
Director

Monique Martin
Faculty Lecturer

Mary Jo McCullogh
Administrative Assistant

392-6708

IT IS THE RESPONSIBILITY OF EACH STUDENT TO READ, UNDERSTAND AND ABIDE BY THE REGULATIONS AND PROCEDURES PRINTED IN THIS BOOKLET.

3.1 GRADUATE DIPLOMA IN PUBLIC ACCOUNTANCY

The Graduate Diploma in Public Accountancy is offered by the Centre under the academic supervision of the Faculty of Graduate Studies and Research to provide the academic training for candidates for the profession of Chartered Accountancy in the Province of Québec.

3.1.1 ADMISSION REQUIREMENTS

Applicants should be graduates of a university of recognized reputation and hold a Bachelor's degree equivalent to a McGill Honours degree in Accountancy. The applicant must present evidence of high academic achievement: a standing equivalent to a Cumulative Grade Point Average (CGPA) of 2.8 out of 4.

Applicants holding other degrees will be required to complete the Qualifying Program for admission to the Diploma Program.

3.2 PROFESSIONAL REQUIREMENTS FOR ADMISSION TO L'ORDRE DES COMPTABLES AGRÉÉS DU QUÉBEC (CA)

Membership in the Ordre des comptables agréés du Québec (CA) entitles one to practice the profession of Public Accountancy in the Province of Québec. Chartered Accountants are also strongly represented in financial and related functions in industry, government and education.

Admission is based upon meeting the following requirements as indicated in the Chartered Accountants Act (Bill 264):

1) possession of a university degree from a recognized institution.
2) possession of a Graduate Diploma in Public Accountancy.
3) passing of the Uniform Final Examinations given by the Ordre.
4) completion of an articling period with a firm of Chartered Accountants which is registered with the Ordre.
5) a working knowledge of French.
6) Canadian citizenship or landed immigrant status.

Further information can be obtained from:

Ordre des comptables agréés du Québec
680 Sherbrooke Street West
Suite 700
Montreal, Québec
H3A 2S3
Tel: (514) 288-3256

3.3 ADMISSION PROCEDURES

Application forms may be obtained from the CA Department in the Centre. The deadline dates for admission are as follows:

Spring – 15 February
Fall – 15 June
Winter – 15 October

Applicants must have a university degree from a recognized institution. Students with foreign degrees must first have their degree evaluated by the Ordre des comptables agréés du Québec and submit evidence of acceptance by the Ordre.

Please note that students who do not register within one year of the date of acceptance will be required to reapply.

Applicants must provide the Centre with a transcript of their marks indicating courses in progress, if any. At the same time arrangements should be made to forward an official transcript confirming the awarding of a degree. An evaluation will be made granting credits in the Qualifying Program for equivalent courses successfully completed and a program approval form will be forwarded to you which must be presented at registration.

3.3.1 ADMISSION FEE

The required admission fee of $15.00 (cash, certified cheque or money order) should be attached to the application form. This fee is non-refundable.

3.4 REGULATIONS IN THE C.A. PROGRAM

FAILURE LIMITATION

a) No student may repeat a course more than ONCE. On the second failure, a student will be required to withdraw from the program. (Final + Supplemental = 1 Failure).
b) Students admitted to the program prior to and including the January 1978 session have a limit set on the number of failures that they may have during their studies. Each student will be allowed to fail no more than one-third of the courses he/she is required to complete.
c) Students admitted to the Program as of the May 1978 session will be allowed to fail no more than one-third of the courses he/she is

required to complete in the CA Program with no more than 2 of these failures in the Diploma Program. (Final + Supplemental = 1 Failure).

d) Students admitted to the Diploma Program as of the May 1978 session must complete the program within four years.

e) Students admitted to the Diploma Program as of the September 1980 session must complete the program within three years.

On being expelled from the Program the student has the right to appeal the decision to the Review Committee. The students has 10 days from the date of the letter of expulsion to submit documents supporting his/her reinstatement.

3.5 REGISTRATION

During all registration periods specific to the CA department our offices will be closed between 9:00 a.m. and 1:00 p.m.

3.5.1 PROGRAM APPROVAL FORMS

Prior to each registration, a Program Approval Form will be forwarded to students. This form must be completed by *all* students and returned to the office for approval *prior* to the registration period. New students must present their course credit form and their letter of acceptance to the program. Registration will not be accepted without these documents.

See section 2.4 of the General Information for registration dates and times.

3.6 EXAMINATIONS

An examination is held at the end of each course. The Student Admission Card must be presented at each examination. Students who misplace their card must obtain a replacement from the Cashier's Office in the Centre.

Students will receive written confirmation of their examination or course results after each term. As the results of each course become available, they will be posted on the Notice Board at the Centre by STUDENT NUMBER. Results cannot be obtained by telephone.

NOTE: Vacation plans do not constitute valid grounds for the deferral of examinations.

3.6.1 EXAMINATION DATES

Fall Term:	8 - 23 December 1982
Winter Term:	11 - 23 April 1983

3.7 GRADING SYSTEM

The department uses the Grading System common to Graduate level programs in the University. For further details see section 2.9.3 of the General Information.

3.8 SUPPLEMENTALS

Candidates who fail a course may be permitted to write a supplemental examination.

To qualify for supplemental privileges students must first write the final examination in the course and obtain a final mark of at least 45%. Candidates who do not pass the supplemental examination will be required to repeat the course. Students must write their supplemental at the *next examination period where the appropriate examination is offered* or forfeit their supplemental privilege.

Applications for supplementals must be submitted at least three weeks prior to the examinatin period. The application form may be obtained from the Centre. There is a charge of $20.00 (non-refundable) (payable to McGill University) for each supplemental.

Date of Final Examination	*Date of Supplemental/ Deferral (Provided course is offered)*
July/August 1982	December 1982
December 1982	April 1983
April 1983	July 1983

3.9 REREADS

Students may request verification of marks. This ensures that all questions have been marked, calculations carried out correctly and class work adequately counted toward the final evaluation. If dissatisfied, a formal reread of the final examination may be requested. The reread request form together with a cheque for $25.00 (payable to McGill University) must be completed within 10 working days of the posting of the final mark at the Centre. The mark resulting from the reread becomes the official mark for the course.

3.10 CONVOCATION

A convocation ceremony is held in the Fall for students who successfully complete the requirements for the Graduate Diploma in Public Accountancy. An application form is mailed to all eligible students at the appropriate time.

3.11 HONOURS & AWARDS

See section 2.7 of the General Information for details.

3.12 COUNSELLING

Counselling is available by appointment. There is no counselling during registration periods.

3.13 COURSE LOAD

The Program is structured in such a way that a student with a B.Com., Major in Accounting and

high standing should be able to complete the Program in four terms and to write the Uniform Final Examinations the year after completing the B.Com. degree.

Each student is expected to do a minimum of two to three hours study for each classroom hour and plans should be made accordingly.

Students are normally allowed to register for a maximum of two courses in the Fall and Winter Terms and a maximum of four courses in the summer over a ten-week period. Students carrying supplemental examinations are required to reduce the maximum number of registrations accordingly. Students who expect to take three or four courses in the summer must do so as full time students.

3.14 FRENCH LANGUAGE REQUIREMENT

See section 2.10 in the General Information for details.

3.15 LIBRARIES

See section 2.12.3 of the General Information for details.

3.16 CA EXAMINATION SUMMER SCHOOL

The Centre for Continuing Education offers a summer school for students writing their C.A. Examinations in September. The Summer School commences in early August and runs for three weeks. This intensive Uniform Final Examination preparatory and review program is optional but highly recommended. The C.A. Syllabus will be reviewed and there will be practice exams written.

3.17 ACCOUNTING CASE SEMINAR

This seminar is offered to C.A. finalists who wish to refine their skills in writing the Comprehensive Question. This program is offered in late August following the CA Examination Summer School by case writing experts under the auspices of McGill. Students write a minimum of four papers which are followed by debriefing sessions. Personal counselling is given to each student. Experienced case writers and UFE markers are involved in the seminar. This seminar is highly recommended as part of your UFE preparation program.

3.18 SUMMER PROGRAM 1983

3.18.1 QUALIFYING PROGRAM

During the Summer of 1983 students will be able to complete a maximum of two courses (Diploma in Management Program) during a seven week period from May to June. A second seven week session (Diploma in Management Program) will be offered in July to enable students to complete in the evening one of the courses jointly with the Diploma in Management Program. The Level I courses to be offered (C.A. Program) include Financial Accounting II, Financial Accounting III and Taxation I over a ten week period commencing early in May.

3.18.2 DIPLOMA PROGRAM

Level II – Those students who have completed the Qualifying Program will be able to do a maximum of four courses over a ten week period commencing early in May.

Level III – For those students who plan to write the Uniform Final Examinations in September 1983 a maximum of four courses may be taken over a ten week period commencing early in May.

3.19 C.A. EXAM WRITING TECHNIQUES SEMINAR

This non-compulsory seminar is highly recommended for students who are planning to enter the Diploma portion of the program. It is designed to assist the student in expressing his/her knowledge clearly and succinctly in the writing of examinations. The seminar is offered in May and January and consists of three sessions of three hours each including lectures, practice sessions, review and counselling. Particular attention is directed to difficulties in reading comprehension, organization of answers and writing skills. This seminar with a UFE orientation is offered in August.

The C.A. Department should be contacted for further information and exact dates.

3.20 QUALIFYING PROGRAM

The Qualifying Program (Level I) consists of 14 courses which provide the foundation upon which the final professional courses are based. Credit in the Qualifying Program is granted on the basis of equivalent work with high standing done in other undergraduate or graduate programs.

LEVEL I

601-501	Financial Accounting I
601-502	Financial Accounting II
601-503	Financial Accounting III
601-521	Managerial Accounting I
601-531	Auditing I
601-541	Taxation I
*274-641	Finance I
*273-631	Management Information Systems
*277-674	Survey of Basic Mathematics
*277-613	Basic Management Statistics
*279-691	Economic Environment of the Firm

*279-692	Economic Analysis of Business
601-551	Law I
601-561	Management Policy

All courses indicated by an asterisk are courses offered in the Diploma in Management/MBA Program.

3.21 DIPLOMA PROGRAM

The Diploma Program consists of 9 courses. Level II is composed of the courses which cover the basic professional skills and accounting knowledge. Level III comprises the courses which are most volatile as to content due to their coverage of current developments.

LEVEL II

602-604	Financial Accounting IV
602-622	Managerial Accounting II
602-632	Auditing II
602-652	Law II
602-638	Computer Systems - Audit & Control

LEVEL III

603-605	Financial Accounting V
603-642	Taxation II
603-634	Auditing III
603-628	Accounting Case Analysis

3.22 COURSE PREREQUISITES

The Qualifying Program must be completed prior to commencing the Diploma Program.

Level II of the Diploma Program must be completed prior to Level III and students cannot begin Level III courses more than 12 months prior to the Uniform Final Examinations that they intend to write.

The prerequisites for courses in the Qualifying Program are indicated in the diagram below:

3.23 COURSE DESCRIPTIONS

Unless otherwise indicated, all courses will be offered once a week for 13 weeks (39 hours) from 6 - 9 p.m. beginning the week of 6 September and 10 January. The fee for each course is $57.00.

Qualifying Program

Level I

(1) FINANCIAL ACCOUNTING I

601-501X-81 Thursdays

Introduction to accounting principles and concepts; measurement of accounting income; preparation of financial statements; balance sheet classifications; depreciation; manufacturing statements.

(2) FINANCIAL ACCOUNTING II

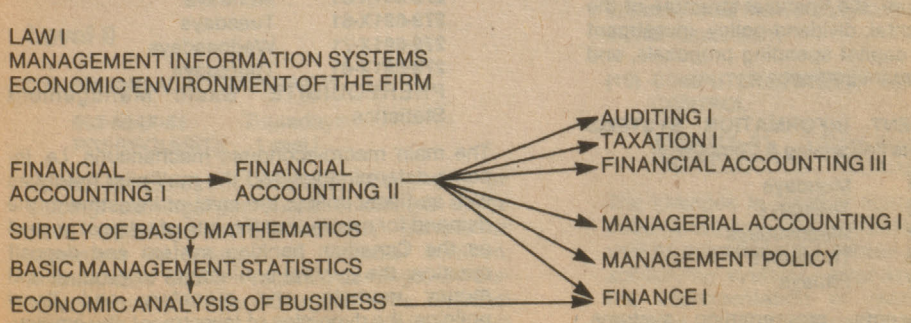
601-502X-81 Thursdays
PREREQUISITE: Financial Accounting I

A detailed review of the accounting for current and long term assets and liabilities, intangibles and shareholders' equity; determination of accounting income and the treatment of prior period adjustments and extraordinary items; working capital and flow of funds; financial statement presentation; partnerships. Current practices and the relevant CICA recommendations will be reviewed in terms of theoretical concepts and principles.

(3) FINANCIAL ACCOUNTING III

601-503X-81 Thursdays
PREREQUISITE: Financial Accounting II

The underlying concepts and accounting treatment of intercorporate investments, business combinations, purchases and pooling of interests, including a detailed examination of the CICA recommendations. Reorganizations; valuation of business enterprises; branches - domestic and foreign; consignments; installment sales; estate and trust accounting.



(PREREQUISITES INDICATED BY ARROWS)

(4) MANAGERIAL ACCOUNTING I

601-521X-61 Tuesdays
PREREQUISITE: Financial Accounting II

Introduction to cost accounting. Elements of cost; job order and process cost systems; budgeting; standard costs and analysis of variances; cost/volume/profit relationships; variable costing; relevant costs.

(5) AUDITING I

601-531X-51 Mondays
PREREQUISITE: Financial Accounting II

An introduction to: the nature and purpose of auditing, appointment, remuneration, powers, duties and responsibilities of an auditor; internal control; audit programs, financial statement presentation; procedures for verification of items in financial statements; audit reports.

(6) TAXATION I

601-541X-61 Tuesdays
PREREQUISITE: Financial Accounting II

Basic principles of tax law; residence, meaning and computation of taxable income; computation of personal tax; foreign tax credits; capital gains; partnerships; trusts; administration and enforcement; case decisions; Revenue Department bulletins, circulars and rulings; appeals.

(7) FINANCE I

274-641X-51 Mondays
274-641X-61 Tuesdays
274-641X-71 Wednesdays
274-641X-81 Thursdays
PREREQUISITE: Financial Accounting II & Economic Analysis of Business

An introduction to financial management and the role of finance, both within the firm and the economy as a whole. The institutional framework of the firm is discussed, including legal forms, taxes, financing instruments and the capital markets. An introduction to the analytics of finance is presented including the pricing of financial instruments, simple models of capital market equilibrium, the financial structure of the firm, cost of capital, dividend policy, investment criteria for new capital spending proposals, and working capital management.

(8) MANAGEMENT INFORMATION SYSTEMS (formerly Data Processing & Computers)

273-631X-51 Mondays
273-631X-61 Tuesdays
273-631X-71 Wednesdays
273-631X-81 Thursdays
273-631X-91 Fridays

Computer concepts, programming systems, timesharing, file organization and modern applications of the computer. Instruction will be given in the use of one or more programming languages and students will be assigned problems involving actual use of the computer.

(9) SURVEY OF BASIC MATHEMATICS

277-674X-71 Wednesdays

The first part of the course will be spent in an intensive review of basic mathematics including algebra, graphs, functions and logarithms. The last part of the course will introduce the student to calculus including limits, functions of one variable, differentiation, integration and applications; and to matrix algebra including determinants and solutions of simultaneous linear equations. The material covered in this course will be adequate to enable students to follow the usual mathematical applications in business, economics, statistics and operations research. Students who feel they have an adequate knowledge of mathematics may sit the Test for College-Entrance Mathematics in lieu of taking the course. For details on the test see section 10.4.1 of the Diploma in Management Program.

(10) BASIC MANAGEMENT STATISTICS

277-613X-51/2 Mondays
277-613X-71/2 Wednesdays
277-613X-81 Thursdays
277-613X-91 Fridays
PREREQUISITE: College-entrance mathematics of Survey of Basic Mathematics

Topics covered include: descriptive statistical analysis, common probability distributions (binominal, Poisson, normal), sampling procedures, sampling distributions, estimation, hypothesis testing, distribution-free procedures (tests of goodness of fit and independence), simple and multiple regression, correlation, one-way analysis of variance, classical time series analysis, Bayesian probability analysis. The course stresses the use of computer programs as an aid in statistical analysis.

(11) ECONOMIC ENVIRONMENT OF THE FIRM

279-691X-51 Mondays
279-691X-61 Tuesdays
279-691X-71 Wednesdays
279-691X-81 Thursdays
PREREQUISITE: Basic Management Statistics

The main macro-economic mechanisms, i.e. income determination and the multiplier theory as well as fiscal policy; the level of investment, the demand for money and the rate of interest as well as the Canadian banking system and deposit creation; the general equilibrium of product and money markets, and monetary and fiscal policies; the dynamics of investment, the employment sector, and the price level and inflation; the

balance of payments and international trade as well as methods of dealing with balance-of-payments disequilibria.

(12) ECONOMIC ANALYSIS OF BUSINESS

279-692X-51 Mondays
279-692X-61 Tuesdays
279-692X-71 Wednesdays
279-692X-81 Thursdays
279-692X-91 Fridays
PREREQUISITE: Basic Management Statistics

The applications of economic theory and methodology in solving business problems. The following topics are discussed in some detail: demand, production, cost analysis, pricing, growth, concentration, profitability, and resource allocation of the firm. Marketing and sales forecasting techniques are also introduced briefly, and attention is given to opportunities for the application of incremental analysis.

(13) LAW I
(Not offered in January 1983)

601-551X-51 Mondays

Sources and administration of law; the Canadian Constitution and the division of powers; the Québec Civil Code comprising the law of persons, the law of property, obligations, contracts, sale, lease and hire, mandate, suretyship, hypothecs and prescription.

(14) MANAGEMENT POLICY
(Not offered in September 1982)

601-561Y-71 Wednesdays
PREREQUISITE: Financial Accounting II

This is an integrating course which examines the theory of organizations, goals, behaviour of individuals and groups, organization structure and design. It also looks at the role of top management in the formulation and administration of policy.

Diploma Program

Level II

(15) FINANCIAL ACCOUNTING IV

602-604X-81 Thursdays
PREREQUISITE: Level I

Advanced topics in financial accounting including: earnings per share; diversified operations reporting; foreign currency translation; statement of changes in financial position; shareholders' equity – retained earnings, extraordinary items, prior period adjustments; financial statement presentation and footnotes; interim reporting and subsequent events and contingencies; accounting for prospectuses, pension costs and corporate income taxes; specialized accounting – financial institutions, fund, real estate, construction, lease, extractive industries and franchises. Detailed study of the relevant CICA and Canada Business Corporations Act requirements.

(16) MANAGERIAL ACCOUNTING II

602-622X-71 Wednesdays
PREREQUISITE: Level I

This course continues the study of cost accounting and management control systems. Particular topics in cost accounting include budgeting, standard costing, analysis of variance, cost-volume-profit relationships. Under management control systems such topics as responsibility accounting, divisional performance measurement, relevant cost analysis, capital budgeting and decision theory are examined. The roles of decision theory, linear programming, network analysis and simulation are examined as they apply to Managerial Accounting.

(17) AUDITING II

602-632X-61 Tuesdays
PREREQUISITE: Level I

The role of the attest auditor. The topics covered include professional practice, auditing standards, evaluation of internal control, audit techniques and procedures, and audit reporting.

(18) LAW II

602-652X-51 Mondays
PREREQUISITE: Level I

The federal and provincial legislation governing corporations, bankruptcy and securities. The rights and responsibilities of the corporation, its shareholders, directors and officers are examined as well as the various requirements for changes to the corporation. The conditions of bankruptcy and insolvency are examined as well as the rights and responsibilities of the participants, particularly the trustee. The requirements of the various security legislations are examined from the point of view of the professional accountant.

(19) COMPUTER SYSTEMS – AUDIT & CONTROL

602-638X-61 Tuesdays
PREREQUISITE: Auditing II

The changes in internal control and audit procedures required in a computer environment. As well as examining the control over computerized accounting systems, emphasis is placed upon the implementation of management control systems. Control verification procedures are examined as applied during the attest audit, and

the use of the computer as an audit tool is explored. The student is expected to develop the expertise to perform the attest audit and to serve as management adviser.

Level III

(20) FINANCIAL ACCOUNTING V
(Not offered in January 1983)

603-605X-61 Tuesdays
PREREQUISITE: Level II

The theory underlying current Canadian accounting practice. Considerable emphasis will be given to the CICA accounting recommendations and exposure drafts, and to the current literature required by the C.A. syllabus. Topics will include: Accounting principles and conventions; financial reporting objectives and requirements; current and long term tangible and intangible assets and liabilities; intercorporate investments, business combinations, consolidations and goodwill; valuation and measurement of income; general price-level and current value accounting; published forecasts and other current developments.

(21) TAXATION II
(Not offered in January 1983)

603-642X-81 Thursdays
PREREQUISITE: Level II

Federal corporate taxation; computation of income, taxable income and tax; corporate distributions and reorganizations; deferred compensation; non-residents and international; administration and enforcement. Federal and provincial sales taxes.

(22) AUDITING III
(Not offered in September 1982)

603-634Y-81 Thursdays
PREREQUISITE: Level II

Special audit investigations and current auditing developments. Specific topics include: the management audit, prospectus assignments, feasibility studies, business valuations, fraud and bankruptcy investigations, insurance losses and financial forecasts.

(23) ACCOUNTING CASE ANALYSIS
(Not offered in September 1982)

603-628Y-71 Tuesdays
PREREQUISITE: Level II & Taxation II

The application of technical knowledge to complex accounting problems faced by the professional accountant. Students will be required to interrelate the knowledge obtained from the study of individual subject areas in order to identify problems, analyse data and formulate recommendations for action. Considerable emphasis will be placed on developing the student's ability to communicate results to a client succinctly and coherently.

3.24 COURSE LIST BY EVENING & TIME

Mondays 6 p.m.

(5) Auditing I
(7) Finance I
(8) Management Information Systems
(10) Basic Management Statistics
(12) Economic Analysis of Business
(13) Law I (September only)
(18) Law II

Tuesdays 6 p.m.

(4) Managerial Accounting I
(6) Taxation I
(7) Finance I
(8) Management Information Systems
(11) Economic Environment of the Firm
(12) Economic Analysis of Business
(17) Auditing II
(19) Computer Systems – Audit & Control
(20) Financial Accounting V (September ONLY)
(23) Accounting Case Analysis (January ONLY)

Wednesdays 6 p.m.

(7) Finance I
(8) Management Information Systems
(9) Survey of Basic Mathematics
(10) Basic Management Statistics
(11) Economic Environment of the Firm
(12) Economic Analysis of Business
(14) Management Policy (January ONLY)
(16) Managerial Accounting II

Thursdays 6 p.m.

(1) Financial Accounting I
(2) Financial Accounting II
(3) Financial Accounting III
(7) Finance I
(8) Management Information Systems
(11) Economic Environment of the Firm
(12) Economic Analysis of Business
(15) Financial Accounting IV
(21) Taxation II (September ONLY)
(22) Auditing III (January ONLY)

4 COMPUTER PROGRAMMING

Professor Edward Burnett
Director

Peter Salomon
Faculty Lecturer

Claudette Lapierre
Administrative Assistant

Marisa Terrenzio
Coordinator of Student Services

Carol Depatie
Student Records

Angele Bedrossian
Admissions

392-6704

4.1 McGILL CERTIFICATE IN COMPUTER PROGRAMMING

All students who wish to follow the McGill Certificate in Computer Programming must apply for admission to this program. Simply following the particular courses in the Announcement does not constitute admission.

Those not wishing to be admitted to the program are welcome to register in courses suiting their own needs provided they have satisfactorily completed the prerequisites. It is emphasized that the official prerequisite(s) for each course must be respected. Students wishing to study independently should note that no more than THREE courses taken prior to admission can be considered for advanced standing in the program.

4.1.1 ACADEMIC REQUIREMENTS

Students may qualify for a McGill Certificate in Computer Programming by completing 4 core courses and 3 electives from those listed below. In order to progress in the Certificate Program at least a "C" must be attained in each course.

Registration is limited to 45 students per class and the course fee contains a laboratory fee for the use of the computer and other equipment. As all courses involve a considerable amount of practical work, students will not be permitted to register for more than 2 courses per term. For each course taken, students should be prepared to spend an extra evening at the University to complete the computer assignments.

Prerequisite: High School Mathematics (See section 9).

CORE

(1) Introduction to Programming
(2) Computers in Data Processing I
(3) Computer Structure and Assembly Language Programming
*(4) Applications in Fortran OR
*(5) Programming in Basic

ELECTIVES

(6) Computers in Data Processing II
(7) PL/1
(8) Computer Systems and Organization
(9) Mini Computers
(10) Programming Numerically Controlled Machine Tools
(11) Data Base Processing
(12) Applications of PL/1
(13) Numerical Analysis for Computer Users I
(14) Numerical Analysis for Computer Users II

*Students must complete either Applications in Fortran OR Programming in Basic. BOTH COURSES CANNOT BE APPLIED TOWARDS THE PROGRAM.

4.1.2 ADMISSION REQUIREMENTS

To be admitted to the Certificate Program:

i) Students must hold a CEGEP diploma (DEC or equivalent).

OR ii) Students 21 years of age and over who do not have the normal academic background for admission may be admitted as mature students.

OR iii) Students under 21 years of age and 18 or over who do not have a CEGEP diploma may be accepted into a qualifying program to be determined by the Department. Formal admission to the Certificate Program will normally follow upon satisfactory completion of the qualifying program.

Students under 18 years of age without a CEGEP diploma (DEC) will not be admitted to the Certificate Program.

4.1.3 ADMISSION PROCEDURES

Students wishing to follow the Certificate Program must obtain an "Application for Admission" and return it with:

i) proof of age

OR ii) unofficial transcript

Arrangements should be made to forward an official transcript confirming CEGEP graduation for students not applying as a mature student.

Application deadlines are:

FALL admission	- June 15
WINTER admission	- October 15
SUMMER admission	- February 15

Please note that students who do not register within one year of date of acceptance will be required to reapply.

4.1.4 APPLICATION FEE

The application fee is $15.00 (non-refundable). This fee includes application for evaluation of transcripts of previous education for students requesting advanced standing in the program.

4.1.5 LANGUAGE ADMISSION REQUIREMENT

ENGLISH REQUIREMENT: Applicants in the Certificate Program who are not Canadian citizens and whose native language is not English must submit evidence of their facility in English before they may be considered for admission. Acceptable evidence would be the successful completion of one of the following:

i) A University program in English

OR ii) The G.C.E. Ordinary & Advanced

Level Examination in English Literature or Composition.

OR iii) The University of Michigan English Language Test (Level V)

OR iv) The Test of English as a Foreign Language (TOEFL) (Score 550)

OR v) The McGill Placement Test (Level V)

Arrangements for the McGill Placement Test may be made through the Languages Department in the Centre for Continuing Education. Telephone: 392-8301.

4.1.6 RESIDENCY REQUIREMENT AND ADVANCED STANDING

A minimum of 6 courses must be taken at McGill, of which 5 must be taken in the evening (eg. if a required course is not being offered during a particular term but the equivalent course is given during the day, the student may obtain permission from this Department to enrol in the day course).

Students wishing exemptions or credits for equivalent study done in other programs at McGill University or elsewhere may apply for Advanced Standing.

Students must submit an "Application for Advanced Standing" to this Department at least six weeks before registration. An unofficial transcript of marks along with a course description must be submitted with the request. Before official confirmation can be given for the credit and/or exemption, students must make arrangements with their university to have an official transcript sent to this Department.

Exemption means that you may substitute one course for another. Credit means you do not have to take another course to replace the one being credited. A grade of "B" or better must be obtained in the course for which exemption/credit is requested.

4.2 DEPARTMENTAL INFORMATION

4.2.1 BOOKSTORE

See General Information section 2.12.1.

4.2.2 CONVOCATION

See General Information section 2.6.

4.2.3 COURSE APPROVAL

All students who are registered in the Certificate Program must obtain Course Approval before each term. The purpose of this is to help students plan their sequence of courses in the way which will best allow them to complete the Certificate Program to their satisfaction. It will also ensure that the prerequisites for each course is observed. Information on Course Approval will be sent to students before each term commences.

4.2.4 COURSES AVAILABLE IN THE DAY

See General Information section 2.

4.2.5 COURSE EVALUATIONS

In order to keep in touch with your needs the Centre seeks continuous feedback on its courses. The results of the course evaluations are used for course development, student information and administrative action. To this end, students are invited to evaluate their courses each term.

4.2.6 DIAGNOSTIC TEST

All students entering the Certificate Program must demonstrate an adequate knowledge of High School Mathematics (ie. Algebra and Functions). For those students who are uncertain of their mathematical knowledge, there will be a diagnostic test on the following dates:

Monday, 9 August 1982
Monday, 8 November 1982
Monday, 4 April 1983

4.2.7 EXAMINATIONS

A final examination is held at the end of each course. It is normally scheduled for the week following the last lecture. STUDENTS SHOULD NOT MAKE OTHER COMMITMENTS FOR THIS PERIOD UNTIL THE FINAL EXAM DATE IS ANNOUNCED BY THE LECTURER.

Examinations must be conducted in accordance with university regulations. Students who do not sit required examination(s) must normally repeat the course. Commitments accepted after registration do not normally excuse students from this requirement.

Students will receive written confirmation of their final examinations or course results after each term. As the results for each course become available, they will be posted on the notice board at the Centre for Continuing Education by student number. RESULTS CANNOT BE OBTAINED BY TELEPHONE.

4.2.8 GRADING SYSTEM

See General Information section 2.9.3.

4.2.9 LIBRARIES

All students registered in this Department have full library privileges at McLennan Library and the Engineering Library upon presentation of their student card of admission. For further details, see General Information section 2.

4.2.10 PREREQUISITES

Admission to certain courses is restricted to students who have reached a certain level of knowledge by having completed other required work. The prerequisite course(s) or conditions are specified in the course description. Students must observe these prerequisites. If you fail to meet the prerequisite requirement, you may be denied permission to continue in the course. Students unsure of their status with regard to a prerequisite must enquire at the Centre.

4.2.11 PRE TERM COUNSELLING

Members of the department's staff will be available to meet with groups of students to explain and discuss the requirements for the program and courses offered.

You will have an opportunity to raise questions and have assistance in suiting your chosen program of studies to your needs. Students are urged to take this opportunity since more time can be devoted to questions well ahead of the start of term. PRE TERM COUNSELLING WILL BE AVAILABLE ON THE FOLLOWING DATES:

Tuesday, 25 May 1982
Wednesday, 9 June 1982

Tuesday, 28 September 1982
Wednesday, 6 October 1982

Tuesday, 8 February 1983

4.2.12 REGISTRATION

Registration is on a first come, first served basis, and students should be aware that the number of registrations accepted will be limited at the option of the Centre. For this reason, early registration is encouraged. PRIORITY WILL BE GIVEN TO THOSE STUDENTS OFFICIALLY ADMITTED TO THE PROGRAM. Please see section 2.4 of the General Information for dates.

Day students in graduate or undergraduate programs taking evening courses for credit are reminded that they MUST REGISTER BOTH WITH THEIR FACULTY AND THE CENTRE FOR CONTINUING EDUCATION.

EFFECTIVE AUGUST 1982, DEPARTMENTAL OFFICES WILL BE CLOSED BETWEEN 9:00 A.M. AND 1:00 P.M. DURING THE REGULAR REGISTRATION PERIOD.

4.2.13 REREADS

See General Information section 2.9.5.

4.2.14 SUMMER PROGRAM

A limited selection of courses will be offered during the summer.

The official schedule will only be made available in early March. Please enquire with this Department for further details.

4.2.15 TIMETABLE

A listing of instructors, textbooks, buildings and room numbers will be distributed at each registration - FALL, WINTER and SUMMER.

The timetable will also contain information about any course or program changes that have come about since the printing of this announcement.

4.3 COURSE DESCRIPTIONS

***Courses marked with an asterisk will be repeated in January.**

COMPUTER PROGRAMMING

* **(1) INTRODUCTION TO PROGRAMMING**

664-100X-51	Mondays 6 - 8:30 p.m.
664-100X-61	Tuesdays 6 - 8:30 p.m.
664-100X-71	Wednesdays 6 - 8:30 p.m.
664-100X-81	Thursdays 6 - 8:30 p.m.
FEE:	$150.00
DURATION:	12 lectures plus labs (30 hours) beginning week of 13 September

PREREQUISITE: High School Mathematics

Basic computer and programming concepts are taught, including data preparation, the rudiments of the FORTRAN language, flowcharting, problem solving on the computer, and the strategies for performing a number of frequently encountered tasks.

* **(2) COMPUTERS IN DATA PROCESSING I**

664-201X-61	Tuesdays 6 - 8:30 p.m.
FEE:	$150.00
DURATION:	12 lectures plus labs (30 hours) beginning week of 13 September

PREREQUISITE: Introduction to Programming

Basic concept in COBOL using a structured programming approach and then applies the COBOL concepts to typical data processing problems involved with sequential file handling.

* **(3) COMPUTER STRUCTURE AND ASSEMBLY LANGUAGE PROGRAMMING**

664-202X-71	Wednesdays 6 - 8:30 p.m.
FEE:	$150.00
DURATION:	12 lectures plus labs (30 hours) beginning week of 13 September

PREREQUISITE: Introduction to Programming

Computer structure, machine language, instruction execution, addressing techniques and digital

representation of data. Symbolic coding and assembly systems, program segmentation and linkage.

* **(4) APPLICATIONS IN FORTRAN**

664-200X-51 Mondays 6 - 8:30 p.m.
FEE: $150.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 13 September
PREREQUISITE: Introduction to Programming

This course consists of two parts. Part I covers the advanced features of the FORTRAN language: Subprograms, common blocks, multidimensional arrays, specialized data types, internal data representation, equivalenced variables, character manipulation and generalized input-output facilities. Part II introduces common applications: computer graphs, text processing, numerical methods, random numbers, simulation, sorting and searching techniques, structured project design. The course puts the emphasis on practical programming assignments.

(5) PROGRAMMING IN BASIC

664-204X-81 Thursdays 6 - 8:30 p.m.
FEE: $150.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 13 September.
PREREQUISITE: Introduction to Programming

The theory of operation of BASIC and each element of the language. Numeric and string data, sub-routines, error handling, sequential and direct file handling and effective interactive input will be discussed.

* **(6) COMPUTERS IN DATA PROCESSING II**

664-301X-81 Thursday 6 - 8:30 p.m.
FEE: $150.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 13 September
PREREQUISITE: Computers in Data Processing I

Students will be introduced to the Operating System and reasonably comprehensive instruction in Job Control Language. Jobs will be assigned which require the use of system utilities. Sort/merge techniques and various non-sequential storage techniques will be discussed and jobs assigned which require accessing and updating of the various types of files.

(7) PL/1

664-300X-61 Tuesdays 6 - 8:30 p.m.
FEE: $150.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 13 September
PREREQUISITE: Applications in Fortran or Computers in Data Processing I

All elements of the PL/1 language will be investigated with particular emphasis on facilities that enhance the use of structured programming. Coverage includes all data types, arrays, structures, Do-groups, Stream I/O, subroutines and functions (procedures), and block structures. The course concludes with exceptional condition handling and an overview of Record I/O.

* **(8) COMPUTER SYSTEMS AND ORGANIZATION**

664-310X-71 Wednesday 6 - 8:30 p.m.
FEE: $150.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 13 September
PREREQUISITE: Computer Structure and Assembly Language Programming

Hardware concepts. Operating system software - resource allocation dispatching, processors, access methods, job control language, batch processing, multiprogramming, multiprocessing, time sharing,

(9) MINI COMPUTERS

664-302Y-71 Wednesdays 6 - 8:30 p.m.
FEE: $160.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 10 January
PREREQUISITE: Computer Structure and Assembly Language Programming

Organization and architecture of small computers. Comparative study of different machine organizations and their uses in applications. Programming for small computers. Addressing techniques. Input and output using interrupts, subroutines, coroutines and recursive programming. Simple data structures - arrays and stacks.

(10) PROGRAMMING NUMERICALLY CONTROLLED MACHINE TOOLS

664-203X-81 Thursdays 6 - 8:30 p.m.
FEE: $150.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 13 September
PREREQUISITE: Introduction to Programming plus some knowledge of machine tool technology.

Overall view of programming of numerically controlled machine tools with emphasis on computer aided programming. Most of the course will deal

with the APT language but other languages will be surveyed.

* **(11) DATA BASE PROCESSING**

664-400X-51 Mondays 6 - 8:30 p.m.
FEE: $150.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 13 September
PREREQUISITE: Applications in Fortran

Input/output processing and file organization; Data structures; multiple keyprocessing; database models; DL/I, a data language; DBTG Data manipulation language. Use of IDBS an Instructional Data Base System. Database implementation. A survey of current Database systems.

(12) APPLICATIONS OF PL/1

664-401Y-61 Tuesdays 6 - 8:30 p.m.
FEE: $150.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 10 January
PREREQUISITE: PL/1

Continuing from the PL/1 course, all aspects of Record I/O will be examined. The relationship of PL/1 to the outside world will be viewed in the light of information retrieval. Sequential file processing will include merging, sorting, and searching techniques. Elements of Job Control Language relevant to direct file processing will also be covered. Efficient programming and the notion of program correctness complete this investigation into the power and flexibility of PL/1.

(13) NUMERICAL ANALYSIS FOR COMPUTER USERS I

305-507X-71 Wednesdays 6 - 8:30 p.m.
FEE: $57.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 13 September
PREREQUISITE: A knowledge of FORTRAN and advanced calculus including matrices

Interpolation, numerical integration, function evaluation, roots of equations of one and several variables, matrices, smoothing and Chebyshev, least square and spline fitting.

(14) NUMERICAL ANALYSIS FOR COMPUTER USERS II

305-608Y-71 Wednesdays 6 - 8:30 p.m.
FEE: $57.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 10 January
PREREQUISITE: Numerical Analysis for Computer Users I

An extension of Numerical Analysis for Computer Users I. Solutions to ordinary differential equations (predictor-corrector and Runge-Kutta) Monte Carlo methods, linear programming, regression analysis and eigenvalues.

4.4 COURSE LIST BY EVENING AND TIME

Mondays 6 - 8:30 p.m.

(1) Introduction to Programming
(4) Applications in Fortran
(11) Data Base Processing

Tuesdays 6 - 8:30 p.m.

(1) Introduction to Programming
(2) Computers in Data Processing I
(7) PL/1
(12) Applications of PL/1 (January 1983)

Wednesdays 6 - 8:30 p.m.

(1) Introduction to Programming
(3) Computer Structure and Assembly Language Programming
(8) Computer Systems and Organization
(9) Mini Computers
(13) Numerical Analysis for Computer Users I
(14) Numerical Analysis for Computer Users II (January 1983)

Thursdays 6 - 8:30 p.m.

(1) Introduction to Programming
(5) Programming in Basic
(6) Computers in Data Processing II
(10) Programming Numerically Controlled Machine Tools

5 EDUCATION

Professor William Lawlor
Director

Patricia Martin
Administrative Assistant

392-4757

5.1 INTRODUCTION

PROGRAMS FOR THE PROFESSIONAL DEVELOPMENT OF TEACHERS

The Education Department of the Centre for Continuing Education offers courses in the following programs: Bachelor of Education for Certified Teachers (Elementary Education) Bachelor of Education (Vocational Education); Diploma in College Teaching and Diploma in Human Relations & Family Life Education Diploma in the Education and Psychology of the gifted; Certificate in Diagnostic and Remedial Mathematics, Certificate in Educational Media, Certificate in Moral and Religious Education, Certificate in Native and Northern Education; Certificate in Reading Instruction, Certificate in Second Language Teaching, Certificate in Social Studies Education, Certificate in Special Education, Program for Kindergarten Specialists.

These programs meet the Provincial standards in regard to the up-grading of teacher classification (Regulation 5). *Therefore teachers who register for courses and wish to have them considered for purposes of scolarité are advised to apply for admission to one of these programs.*

For application forms apply to:

The Office of Continuing Education
McGill Faculty of Education
3700 McTavish Street
Montreal, PQ
H3A 1Y2
(514) 392-8815

5.2 REGULATIONS AND PROCEDURES

It is the responsibility of each student to read, understand, and abide by the regulations and procedures printed in this booklet. Please see General Information.

5.2.1 REGISTRATION

LOCATION: Faculty of Education, 3700 McTavish. Students are encouraged to register for Fall, Winter and Spring Session courses in Education prior to 9 September.

20 July to 21 July	Tuesday & Wednesday 10 am – 3 pm
7 September to 9 Sept.	Tuesday – Thursday 12 noon – 7 pm
*11 November	Thursday 4 pm – 9 pm
*12 November	Friday 9 am – 3 pm
4 January to 5 January	Tuesday & Wednesday 12 noon – 7 pm
5 April to 6 April	Tuesday & Wednesday 12 noon – 7 pm

Please note that Late Registration Periods will be held after each registration period. Dates and times will be posted outside the Education General Office. A late registration penalty of $10 will be charged.

***PLEASE NOTE THAT THIS IS A SPECIAL REGISTRATION FOR WINTER AND SPRING COURSES TO BE HELD AT THE PAPT/PACT TEACHER'S CONVENTION AT THE QUEEN ELIZABETH HOTEL.**

5.2.2 FEES

Fees for Fall Session courses are payable on the date of registration, but arrangements may be made for payment of Winter and Spring Sessions courses. Personal cheques are acceptable and must be made payable to McGill University.

Students registered with the Faculty of Education will be required to pay $57.00 for a 3 credit course and $114.00 for a 6 credit course.

PLEASE READ CAREFULLY THE SECTION CONCERNING WITHDRAWALS AND TRANSFERS FROM COURSES OR COURSE SECTIONS.

5.2.3 LIBRARIES

Library privileges are available to all students registered in the Education Department of the Centre for Continuing Education in the following Libraries.

1) Education Library
   Faculty of Education
   3700 McTavish Street

2) McLennan Library
   McGill Campus

Students requiring the services of McLennan Library must first obtain a library card. This will be issued upon presentation of your Centre for Continuing Education Student Card of Admission. For further information please call 392-4936.

5.2.4 CURRICULUM LABORATORY

The materials in the Curriculum Lab may be used in the Curriculum Lab and are available on a loan basis for evening students. The normal loan period is seven days.

5.2.5 ACADEMIC STANDING AND GRANDING – PROGRAMS OF PROFESSIONAL DEVELOPMENT FOR TEACHERS

Diploma in Educational Administration
Diploma in College Teaching
Diploma in the Education and Psychology of the Gifted
Diploma in Human Relations and Family Life Education
Certificate in Diagnostic and Remedial Mathematics
Certificate in Educational Media
Certificate in Moral and Religious Education
Certificate in Native and Northern Education
Certificate in Reading Instruction
Certificate in Second Language Teaching
Certificate in Social Studies Education

Certificate in Special Education
Kindergarten Program

Satisfactory completion of the 30 credit program will qualify the student to apply for the appropriate Certificate or Diploma. However, in cases where a Diploma is issued by the Québec Department of Education the student must also meet the prerequisite qualifications as determined by the Department of Education.

TIME LIMITS

30-credit programs taken on a part-time basis must normally be completed within five years of admission to the program. Programs taken on a full-time basis must normally be completed within 28 months of admission to the program.

STUDENT TEACHING (PRACTICUMS)

In programs where there is a compulsory practicum (field experience/student teaching) a satisfactory Pass ('P') is required. If a student fails this component of the program the student will be required to withdraw from the program, but may appeal for readmission to the Committee on Admissions, Standings and Promotions. Satisfactory progress in the student's course work is a pre-requisite for placement in the Practicum.

GRADING

Students are required to obtain a 'C' grade or higher in all compulsory core subjects and may not include more than one 'D' grade (not exceeding 4 credits) in the elective courses. Students who obtain no more than two 'D' or 'F' grades (not exceeding 8 credits) may be permitted to write supplemental examinations if they are offered and/or repeat the course. Students may repeat failed courses only once. Failures and inadmissible 'D' grades must normally be made up within 16 months of terminating the original course.

TRANSFER CREDITS

Transfer credit in these programs is not normally advisable because of the Provincial requirement to complete 30 credits of study for scolarité purposes. However, with the permission of the Program Director, up to 12 transfer credits may be permitted. Students must first obtain permission of the Program Director concerned.

5.2.6 GRADING SYSTEMS

Courses are graded either by letter grades or in percent, with the following correspondences: A(85-100), A−(80-84), B+(75-79), B(70-74), B−(65-79), C+(60-64), C(55-59), D(50-54), F(0-49). Grades A, B, C are termed satisfactory passes, D is a conditional pass, and F is a failure. For further details see Section 2.9.3 of the General Information.

5.2.7 SUPPLEMENTAL EXAMINATIONS

It should be noted that supplemental examinations are not necessarily available in all courses and **no** supplemental examinations are offered in Art, Music, Second Languages and Reading. It is therefore the student's responsibility to check with the individual instructors to ascertain whether or not supplementals will be available.

If a student fails a course or obtains a conditional pass (50-54%), he may be permitted to sit a supplemental, repeat the course or substitute another course. It should be emphasized that these privileges are within the discretion of the Committee on Admission, Standing and Promotion. If permission is granted, the student must normally clear the failure or conditional pass within 16 months of terminating the original course. In order to be eligible to write a supplemental examination, the candidate must apply in writing to the Associate Director and attach an examination fee of $20.00.

5.2.8 TIMETABLE

A listing of instructors, building and room numbers for all courses will be available by September. Please obtain a copy from the Centre or the Faculty of Education.

An evaluation process will be conducted in all courses. For students who wish to avail themselves of this opportunity.

5.3 COURSE NUMBERS

The first digits of the course number are used to designate the department or teaching unit from which the course originates. The code used is as follows:

101 - History
114 - Classics
260 - Religious Studies
381 - Consumer Education
382 - Nutrition and Diet
411 - Department of Administration and Policy Studies in Education
412 - Counselling courses, Department of Educational Psychology and Counselling
414 - Special Education courses, Department of Educational Psychology and Counselling
415 - Catholic Studies courses, Department of Religion and Philosophy in Education
416 - Educational Psychology courses, Department of Educational Psychology and Counselling
421 - Protestant Studies courses, Department of Religion and Philosophy in Education
422 - Jewish Studies courses, Department of Religion and Philosophy in Education

423 - Philosophy courses, Department of Religion and Philosophy in Education
424 - Drama courses, Department of Education in the Arts
425 - Department of Secondary Education
426 - Art courses, Department of Education in the Arts
429 - Music courses, Department of Education in the Arts
431 - Department of Education in Second Languages
432 - Media courses, Department of Educational Psychology and Counselling
433 - Department of Early Childhood and Elementary Education
434 - Department of Physical Education
435 - Student Teaching
436 - Vocational Education courses, Department of Secondary Education
449 - College Teaching courses, Department of Educational Psychology and Counselling
451 - Dance courses, Department of Education in the Arts

5.4 SNOW POLICY

Past experience has clearly shown that our weather is often difficult to manage. Unfortunately it is sometimes necessary to cancel classes.

All students should be aware of the following policy:

1. No decision will be made until 1 p.m.
2. A decision to cancel will be made public through radio stations CJAD, CBM, CFCF & CKGM.

5.5 PROGRAMS

5.5.1 BACHELOR OF EDUCATION FOR CERTIFIED TEACHERS (ELEMENTARY EDUCATION)

This 90-credit B.Ed. degree was designed for teachers who are already certified to teach in elementary schools and who wish to upgrade their qualifications to degree status. A student must take a minimum of 60 credits in the program in order to qualify for a degree. Thus, only 30 credits from other institutions or programs may be considered for transfer credits. This program is available on a part-time day basis in the summer, and in the evenings during the fall, winter and spring terms. It is also available on a full-time basis.

The program combines academic courses in areas of concentration, academic and free electives, and professional courses related to educational theories and teaching strategies. Candidates may satisfy professional requirements of the degree by following concurrently a 30 credit program in Diagnostic Mathematics, Educational Media, Kindergarten, Moral and Religious Education, Reading, Second Language Teaching, Social Studies Education and Special Education. These programs are described below.

The admission requirements are:

1. Teacher training from an approved institution;
2. Diploma of Collegial Studies or equivalent;
3. An interview if opting for a concentration in Special Education, Second Languages or Moral and Religious Education;
4. A good functional knowledge of English. Those whose mother tongue is not English may be required to pass a language proficiency test.

Program Profile

Candidates enrolled in this 90 credit program must complete course work within the following general pattern:

1) Thirty (30) **academic** credits in five (5) subject areas, relevant to elementary education in a 12-9-3-3-3 pattern (i.e. 12 credits in one subject, 9 credits in a second subject, and 3 credits in each of three other subject areas).

Note: Subject areas relevant to elementary education, in broad terms, are Art, English, French, General Science, Mathematics, Music, Physical Education, Religion, Social Sciences.

2) Fifteen (15) credits chosen from courses which will enhance the candidate's **cultural development.** These are to be chosen in consultation with the Department Adviser.

3) Fifteen (15) credits as **free electives** (courses selected by candidate after consultation with the Department Adviser).

4) Thirty (30) credits in a prescribed **education concentration.** At the present time, these are available in Diagnostic and Remedial Mathematics, Educational Media, Kindergarten, Moral and Religious Education, Reading Instruction, Second Language Teaching, Social Studies Education, and Special Education as described below.

Note: Those who do not opt for one of the Education Concentrations listed above may follow a **general option** under the guidance of the Department Adviser.

Further information regarding this program may be obtained from the Department of Early Childhood and Elementary Education at (514) 392-8871..

5.5.2 BACHELOR OF EDUCATION (VOCATIONAL EDUCATION)

This 90-credit degree program is designed for teachers who teach vocational subjects (business and technical) full-time at the secondary level.

Program Profile

The degree is completed in two phases: Certification and Post-Certification.

Certification Phase

Designed to meet the legal requirement for vocational teacher certification through courses emphasizing teaching methodologies and the implementation of these strategies within the secondary school setting. 30 credits.

Post-Certification Phase

Primary emphasis is towards upgrading and perfecting the skills of vocational teachers who have previously met minimum certification requirements. Courses within this phase are of three types and terminate in the attainment of the B.Ed. (Vocational) degree.

1. Subject Specialization: Courses directly applicable to the subject matter taught in the secondary school. Includes experiences within the industrial and business milieu. 30 credits.
2. Departmental Selection: Courses normally pursued within the Division of Vocational Teacher Education relating either to special methodologies of teaching or to vocational education in general. 15 credits.
3. Free Electives: Courses chosen by the candidate in conjunction with an adviser from any course within the university which carries credit. 15 credits.

Entrance Requirements

Certification Phase: *For persons presently teaching vocational education full time in a secondary school,* the basis for entry into the program is a Provisional Teaching Authorization and a contract to teach vocational education.

For persons who are not yet teaching, the requirements are 13 years of schooling or equivalent, including appropriate technical or business courses, and three years of work experience applicable to the vocational subjects taught at the secondary school level.

Post-Certification Phase: *For vocatinal teachers who already hold a teaching permit in vocational education,* the basis for entry into this phase of the program is completion of the Certification Phase or equivalent program.

NOTE: The courses listed under the section 436 – VOCATIONAL TEACHER EDUCATION are courses in the Post-Certification phase.

5.5.3 DIPLOMA IN COLLEGE TEACHING

The program leading to the Diploma in College Teaching has been developed as a flexible 30-credit program intended to meet the needs of college teachers. The program consists of two core courses taken by all (6 credits), options (18 credits), and a practicum taken by all (6 credits)

Admission requirements are:

1) a baccalaureate or equivalent;
2) a teaching position at the college level.

Further information regarding this program may be obtained from the office of:

Associate Director of College-Level Programs
Faculty of Education
3700 McTavish Street
Montreal, PQ, H3A 1Y2.
(514) 392-8807.

Program Profile

Required Courses		**12 credits**
449-587	Managing a Learning System (3 credits)	
449-588	Instructional Design in Higher Education (3 credits)	
449-592	Practicum in the College Setting (6 credits)	

Elective Courses		**18 credits**
449-584	Laboratory Teaching (3 credits)	
449-589	Teaching and Learning: Systematic Instruction in Higher Education (3 credits)	
*449-590	Studies in the Discipline for More Effective Teaching I (3 credits)	
*449-591	Studies in the Discipline for More Effective Teaching II (3 credits)	

*Provided arrangements can be made with the appropriate subject department.

The above courses are representative of the options available to candidates in the program. In addition, qualified candidates may register for courses affording field experience in business, industry or nursing. Courses may also be selected from those offered by the various departments of the Faculty of Education as well as those of other Faculties and Schools in the university, with the approval of the Associate Director of College Level Programs and through the cooperation of the department concerned.

5.5.4 DIPLOMA IN THE EDUCATION AND PSYCHOLOGY OF THE GIFTED

This program is designed to provide theoretical background, practical training and experience in the nature of giftedness and the differential education of the gifted in a variety of settings. A core of courses is supplemented by a research project and options in areas of the student's interest.

ADMISSION REQUIREMENTS:

To be eligible for admission, candidates must:

1. hold a recognized undergraduate degree with an overall standing of B, or equivalent;
2. have worked successfully with children;
3. show evidence they possess at least one area of competence, expertise and continuing interest either in a traditional discipline or in an interdisciplinary field of study;
4. possess a knowledge of introductory statistics;
5. have completed teacher training from an approved institution or possess comparable professional training in a field such as counselling, child psychology, or social work; and
6. provide official transcripts, at least 2 reference letters, and a personal statement in support of the above.

Equivalent Credits

Required courses which duplicate a course previously taken may, with the program director's written approval, be replaced by an elective.

Graduation requirement

Every course taken for credit toward the Diploma must be passed with a grade of B– or higher and an overall GPA of at least 3.0.

Program Profile

In general, students should take the groups of courses in sequence.

Group 1		9 credits
416-249	Creativity and its Cultivation	
416-346	Talented and Gifted Students	
416-304	Measurement and Evaluation in Education	
Group 2		12 credits
416-396	Nature of Intelligence	
411-450	Curriculum Alternatives	
416-457	Practicum in the Education of the Gifted	
416-535	Psychology and Instructional Design	
Group 3		3 or 6 credits
	One or more elective courses either in an academic discipline other than psychology or an advanced course in the curriculum and instruction of a discipline.*	
Group 4		3 or 6 credits
448-497	Individual Research Project 3 credits	
	or	
448-498	Individual Research Project 6 credits.	

Total: 30 credits

*A list of recommended electives is available from the program director.

To find full descriptions of courses consult sections of this calendar as follows: for courses beginning with 416-, Educational Psychology and Counselling: 411-, Educational Administration and Policy Studies.

Further information is available from the department. Telephone 392-8803.

5.5.5 DIPLOMA IN EDUCATIONAL ADMINISTRATION

This in-service program is designed to meet the needs of educational administrators who wish to obtain further knowledge and expertise in their field. The focus for this Diploma is practice and will include both practical applications and critical appraisal of present practices in educational administration. The program has been developed at the request of school administrators and is expected to appeal to both school personnel (Principals, Vice-Principals, etc.) and to those engaged in other types of educational administration (school board officers, CEGEP officials, adult education directors, finance officers, etc.)

The program has been developed in a sequential manner and will be available on a part-time basis during the Summer Session and intervening evening fall, winter and spring sessions when enrolment permits.

Admission requirements:

1. a baccalaureate or equivalent;
2. at least two years of attested experience as an administrator in the educational milieu; preference will be given to those currently engaged in full-time administrative work.

Enrolment in the Diploma is currently restricted to those selected by the M.E.Q. and school boards.

Application forms and further information may be obtained from:

Diploma Program
Administration and Policy Studies
Duggan House
3724 McTavish Street
Montreal, PQ, H3A 1Y2
(514) 392-8833

PROGRAM PROFILE

Required Courses		**24 credits**
411-511	General Administrative Practice (6 credits)	
411-530	Administration of Education in Québec (3 credits)	
411-542	Curriculum Planning in Public Ed. (3 credits)	
411-544	Resource Utilization in Education (3 credits)	
411-552	School Personnel Practice (3 credits)	
411-562	Planning for Change in Public Education (3 credits)	
411-582	Social Groups in Administration (3 credits)	

Elective Courses **6 credits**

Selected from the Continuing Education offerings, with the approval of the department.

5.5.6 DIPLOMA IN HUMAN RELATIONS AND FAMILY LIFE EDUCATION

The Department of Educational Psychology and Counselling offers a diploma program in Human Relations and Family Life Education. This program is intended to train people who wish to conduct Family Life Education programs in schools, hospitals, religious institutions, and social service centres. The program is also designed for people who, though qualified to work in their respective professional domains, may wish to acquire auxiliary skills in basic human communication, group animation and effective interviewing.

A total of 30 credits is required to complete the program. Students should consult with advisers concerning appropriate course profiles.

Admission requirements:

1. a baccalaureate or equivalent;
2. two letters of recommendation.
3. a biographical sketch.

Further information may be obtained from the Office of Continuing Education.

Required Courses **18 credits**

412-401 Principles of Helping Relationships (3 credits)
412-402 Group Processes and the Individual (3 credits)
412-403 Human Sexuality for the Helping Professions (3 credits)
416-460 Human Development (3 credits)
411-461 Society and Change (6 credits)

Elective Courses **12 credits**

412-403 Practicum in Interviewing Skills (3 credits)
412-405 Crisis Intervention Processes (3 credits)
412-406 Organizational Development (3 credits)
412-407 Practicum in Group Leadership Skills (3 credits)
412-408 Seminar in Special Topics (3 credits)
412-409 Individual Reading Course (3 credits)
416-462 Small Group Processes and the Family (3 credits)
416-463 Personal Awareness and Leadership in Family Life Education (3 credits)
416-464 Family Communication (3 credits)

5.5.7 CERTIFICATE IN DIAGNOSTIC AND REMEDIAL MATHEMATICS

Elementary school students have varying abilities to abstract, generalize, reason and to recall when learning mathematics. As the initial training in most teaching programs is of a general nature, many teachers encounter difficulties when trying to diagnose the difficulties the students experience in learning mathematics. The purpose of this certificate is to offer more specialized training for practicing elementary school teachers in diagnostic and remedial mathematics in an in-service program.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

Admission requirements:

1. Diploma of Collegial Studies or equivalent;
2. Teacher training from an approved institution;
3. Letter of recommendation from a competent authority;
4. Test of Proficiency in Mathematics.

Further information can be obtained from the Office of Continuing Education.

Program Profile

Required Courses **24 credits**

Two of the following Background Courses (6 credits)

433-230 Background Mathematics for Elementary School Teachers (3 credits)
433-234 Background Geometry for Elementary School Teachers (3 credits)
433-433 Perspectives on Elementary Mathematics Education (3 credits)

One of the following Reading Courses (3 credits)

433-466 Reading in the Content Fields (3 credits)
433-467 Special Topics in Reading (3 credits)

Each of the following (15 credits)

414-442 Psychology of Learning Problems (3 credits)
433-436 Mathematical Development in Elementary School Children (3 credits)
433-437 Diagnosis and Remediation in Mathematics for Elementary School Teachers (3 credits)
433-438 Clinical Practicum (6 credits)

Elective Courses **6 credits**

414-340 Education of Exceptional Children (3 credits)
416-394 Cognitive Development in the School Age Child and Adolescent (3 credits)
416-495 Seminar in Special Topics (3 credits)
433-435 Special Topics in Mathematical Education (3 credits)
432-204 Educational Media (3 credits)
432-409 Special Topics Educational Media (3 credits)

5.5.8 CERTIFICATE IN EDUCATIONAL MEDIA

Faculty of Education offers a 30 credit McGill Certificate in Educational Media. The program is aimed at teachers, business trainers, media coordinators and others interested in the design, production, evaluation, utilization and administration of instructional media.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

Admission requirements:

1. Diploma of Collegial Studies or equivalent;
2. Letter of recommendation from employer.

Further information may be obtained from the Office of Continuing Education.

PROGRAM PROFILE

Required Courses: Theory (12 credits)

432-204 – Educational Media (3 credits)
432-209 – Media and Instructional Design (3 credits)
432-220 – Graphic Design for Instructional Materials (3 credits)
432-304 – Educational Media II (3 credits)

Options: Production – 2 of the following (6 cr.)

416-310 – Computer Applications in Education
432-205 – Film Production and Film Criticism
432-303 – Photography I
432-306 – Educational Television I

Electives: 4 of the following (12 credits)

416-304 – Measurement and Evaluation in Education (3 credits)
416-310 – Computer Applications in Education (3 credits)
416-xxx – Additional course in School Computer Applications (3 credits)
416-456 – Application of Psychological Principles to Educational Problems (3 credits)
426-296 – Basic Design (3 credits)
432-205 – Film Production and Film Criticism (3 credits)
432-303 – Photography I (3 credits)
432-305 – Advanced Film Production (3 credits)
432-306 – Educational Television I (3 credits)
432-403 – Photography II (3 credits)
432-404 – Contemporary Developments in Educational Media (3 credits)
432-405 – Independent Project (6 credits)
432-406 – Management of Educational Media Services (3 credits)
432-407 – Educational Television II (3 credits)
432-409 – Special Topics in Educational Media (3 credits)
432-440 – Media Curriculum and Instruction – Elementary (3 credits)
432-470 – Media Curriculum and Instruction – Secondary (3 credits)

5.5.9 CERTIFICATE IN MORAL AND RELIGIOUS EDUCATION

This 30 credit program was designed to meet the needs of both Catholic and Protestant teachers concerned with moral and religious education.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

Admisison requirements:

1. Diploma of Collegial Studies or equivalent;
2. teacher training from an approved institution;
3. letter of recommendation from a competent authority;
4. personal interview may be required;
5. normally, the candidate should be actively engaged as a teacher or be in a position to teach moral and religious instruction in order to fulfill the practical requirements of the program.

Further information may be obtained from the Office of Continuing Education.

PROGRAM PROFILE

A program profile is established to correspond to the particular concerns and interests of the candidate. Courses are selected in consultation with the program director.

Part One: 9 credits are selected from courses in philosophy of education and in the teaching of religion and/or values at the elementary or secondary level. A special project is part of the requirements for the certificate.

Part Two: 18 credits distributed as follows:

1. 3 credits intended to provide a basic approach to the philosophy or history of religion.
2. 12 credits selected from courses in moral and ethical thinking, biblical studies, various questions central to the Christian religious tradition.
3. 3 credits exploring an issue pertinent to moral and religious education such as religion and science art, human sexuality.

Part Three: 3 credits elective.

5.5.10 CERTIFICATE IN NATIVE AND NORTHERN EDUCATION

This 45 credit program has been developed to provide qualifications for Inuit teachers employed in the North. It is offered on a part-time

basis in settlements in Northern Québec or the Eastern Artic in cooperation with participating school commissions, particularly the Kativik School Board.

Admission requirements:

1. Employment as a teacher in the North.
2. A valid teaching authorization from the appropriate education authority.
3. Recommendations from a school principal, an officer of the education authority and a settlement education committee.
4. Normally be 21 years of age or older.
5. Fluency in Inuttitut.

Further information may be obtained from: Professor Jack Cram, Program Director at (514) 392-8202.

Program Profile

Required Courses **39 credits**

a) Basic Education (9 credits)
- 433-245 Orientation to Inuit Education (3 credits)
- 414-211 Social and Emotional Development and Behavior (3 credits)
- 411-202 Educational and Administrative Institutions in the North (3 credits)

b) Field Work (18 credits)
- 414-212 Perceptual Motor Development and Teaching (3 credits)
- 433-246 Cultivating Language and Thought (3 credits)
- 433-247 Practicum in Individualized Instruction (6 credits)
- 435-422 Teaching Internship and Evaluation (6 credits)

c) Curriculum and Instruction (12 credits)
- 433-248 Reading and Writing Inuttitut (3 credits)
- 433-249 Inuttitut Orthography and Grammar (3 credits)
- 433-242 Mathematics for Inuit Children (3 credits
- 424-242 Cultural Skills (3 credits)

Options 6 credits

6 credits in the following areas will be offered in the North. Other courses maybe followed in consultation with the Program Director.

Advanced Inuttitut Language and Culture
Teaching English as a Second Language
Basic Language (English or French)
Advanced Language (English or French)
Media in the Classroom
Community Studies
Environmental Studies
Movement Education
Creative Drama, Art, Music

On completion of the Certificate program, candidates may apply for admission to the B.Ed. for Certified Teachers with up to 30 credits advanced standing. Certain non-credit academic upgrading courses may be required of B.Ed. candidates particulary in English or French.

5.5.11 CERTIFICATE IN READING INSTRUCTION

The Certificate in Reading Instruction is a 30 credit program which consists of a sequence of ten courses. This program is intended to train practicing teachers in more effective developmental and corrective teaching of reading.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

The admission requirements are:

1. Diploma of Collegial Studies or equivalent;
2. Teacher training from an approved institution
3. Letter of Recommendation from a competent authority.

Further information may be obtained from the Office of Continuing Education.

Program Profile

Required Courses **24 credits**

Students will normally take *eight* courses from the following and two electives approved by their advisor. Please note special requirements where applicable.

1. Students must take at least 2 of the following 3 Reading Instruction courses. These 2 must be either 433-260 and 433-262 or 433-262 and 425-463.

- 433-260 Reading Instruction: Early Childhood (3 credits)
- 433-262 Reading Instruction: Later Childhood: (3 credits)
- 425-463 Reading Instruction: High School (3 credits)

And as a Pre-requisite for the Corrective Reading instruction courses.

- 433-364 Introduction to Reading Diagnosis and Assessment (3 credits)

2. Students must take 2 of the following 3 Corrective Reading courses. These 2 courses must be either 433-261 and 433-263 or 433-263 and 425-467. The Reading Instruction courses at the same level as well as the introduction to Reading Diagnosis and Assessment, are pre-requisites for the Corrective Reading Courses. Both Corrective Reading courses are done together.

- 433-261 Corrective Reading Instruction: Early Childhood (3 credits)

433-263 Corrective Reading Instruction: Later Childhood (3 credits)
425-467 Corrective Reading Instruction: High School (3 credits)

3. At least one of the following courses must be taken:

433-325 Children's Literature (3 credits)
425-366 Literature for Young Adults (3 credits)

4. The following two courses must also be included:

433-465 Integrated Language Arts (3 credits)
433-466 Reading in the Content Fields (3 credits)

5.5.12 CERTIFICATE IN SECOND LANGUAGE TEACHING

This 30 credit program seeks to enhance the professional competence of certified teachers who are interested in teaching second languages and are sufficiently bilingual to do so. The program offers two options:

French as a Second Language, Elementary and Secondary
English as a Second Language, Elementary and Secondary

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

Admission requirements:

1. teacher training from an approved institution;
2. Diploma of Collegial Studies or equivalent;
3. language proficiency tests administered by the Department of Education in Second Languages;
4. letter of recommendation from a competent authority;
5. normally, the candidate should be actively engaged as a teacher of the language concerned or should begin teaching it during enrolment in the program so that a supervised practicum may be assured.

Further information may be obtained from the Office of Continuing Education.

PROGRAM PROFILE

Required Courses **18 credits**

1. One of the following: (6 credits)
Either (a) or (b)

(a) French as a Second Language: 431-344 Teaching French as a Second Language – Elementary School
and
431-372 Teaching French as a Second Language – Secondary School – (3 credits)

(b) English as a Second Language: 431-347 Teaching English as a Second Language – Elementary School (3 credits)
and
431-358 Teaching English as a Second Language – Sec. School (3 credits)

2. 431-360 Practicum in Second Language Teaching I (3 credits)
431-361 Practicum in Second Language II (3 credits)

3. One of the following:
431-301 Applied Linguistics (French) (3 credits)
431-311 Applied Linguistics (TESL)

4. Selected Academic Course: (3 credits) Language, Linguistics or literature

N.B. For ESL Teachers, 431-449; Special Topic: Linguistics for Teachers.

Elective Courses **(12 credits)**

431-302 Measurement and Evaluation in Teaching French as a Second Language (3 credits)
431-312 Second Language Teaching (3 credits)
431-303 Media and Second Language Teaching (Didactique instrumentale) (3 credits)
431-304 Sociolinguistics and Second Language Teaching (3 credits)
431-305 Psycholinguistics and Second Language Teaching (3 credits)
431-307 Error Analysis and Second Language Teaching (3 credits)
431-340 Animation Techniques (3 credits)
431-345 Bilingual Class (3 credits)
431-346 Bilingual Class II (3 credits)
431-373 In-depth Study of Curriculum Development in Second Languages (3 credits)
431-380 Teaching French to Non-Francophone Adults (3 credits)
433-325 Children's Literature (3 credits)
425-366 Literature for Young Adults (3 credits)
424-394 Creative Dramatics for the Classroom (3 credits)
425-463 Reading Instruction – High School (3 credits)
433-465 Integrated Language Arts Program (3 credits)

5.5.13 CERTIFICATE IN SOCIAL STUDIES EDUCATION

This program has been designed:

1. To provide the opportunity for elementary teachers to broaden their knowledge of social studies, to be more aware of the social studies methodology and to improve their skills in individualized instruction;
2. To provide a sequence of courses which will ensure a sound foundation for any elementary teacher.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

Admission Requirements:

1. Diploma of Collegial Studies or equivalent;
2. Teacher training from an approved institution;
3. Letter of recommendation, from a competent authority.

Further information may be obtained from the Office of Continuing Education.

Program Profile

Required Courses **24 credits**

433-381 Social Studies C & I - Early Childhood (3 credits)
433-382 Social Studies C & I - I - Later Childhood (3 credits)
433-383 Social Studies C & I - II - Later Childhood (3 credits)
425-482 Simulation in the Social Sciences (3 credits)
425-486 Approaches to Valuing in Social Science Education
433-485 Reading Course in Elementary Social Studies (3 credits)
433-487 Independent Project (6 credits)

Elective Courses **6 credits**

416-394 Cognitive Development (3 credits)
433-325 Children's Literature (3 credits)
425-366 Literature for Young Adults (3 credits)
433-466 Reading in the Content Fields (3 credits)
432-204 Educational Media (3 credits)

Note: In special circumstances, elective courses other than the above may be chosen with the consent of the Program Director.

5.5.14 CERTIFICATE IN SPECIAL EDUCATION

This 30 credit program is designed to prepare teachers to teach exceptional children. It provides a sequence of courses which will ensure a sound foundation for any teacher in Special Education and at the same time permits successful candidates to meet the minimum academic requirements of the Ministry of Education (Québec) for the awarding of the Québec Diploma in Special Education. It is also intended to encourage and provide the opportunity for teachers of regular classes to broaden their knowledge of exceptional children, to be more aware of the psychology behind the practice of Special Education and to improve their skills in individualized teaching.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified teachers.

Admission requirements:

1. Diploma of Collegial Studies or equivalent;
2. teacher training from an approved institution;
3. letter of recommendation from a competent authority;
4. personal interview may be required.

Further information may be obtained from the Office of Continuing Education.

PROGRAM PROFILE

Required Courses **24 credits**

414-340 Education of Exceptional Children (3 credits)
414-341 General Methods in Special Education (3 credits)
414-342 Organization of Special Education Programs (3 credits)
414-343 Introduction to Diagnosis and Assessment (3 credits)
414-344 Practicum in Diagnosis and Assessment of Learning Problems (3 credits)
414-440 Cognitive and Psychomotor Problems of Exceptional Children (3 credits)
414-441 Behaviour Problems of Exceptional Children (3 credits)
414-442 Psychology of Learning Problems (3 credits)

Elective Courses **6 credits**

414-346 Talented and Gifted Students (3 credits)
414-443 School, Home and Community Relations in Special Education (3 credits)
414-444 Materials in Special Education (3 credits)
414-445 Vocational Habilitation of Exceptional Children (3 credits)
414-446 Special Topics in the Education of Exceptional Children (3 credits)

In addition to the above, other elective courses may be approved by the Program Director.

5.5.15 PROGRAM FOR KINDERGARTEN SPECIALISTS

This program is designed for **Québec certified** elementary school teachers who wish to become Kindergarten Specialists. This 30 credit program includes courses in Child Development. Art, Music, Creative Movement and Dramatics, Teaching Methods and Materials for children of the 4-5 age group.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

Admission requirements:

1. Diploma of Collegial Studies or equivalent;
2. teacher training from an approved institution;
3. Québec Permanent Teacher Certification.

Further information may be obtained from the Office of Continuing Education.

Program Profile

Required Courses **24 credits**

416-214 Child Development (6 credits)
416-314 Developmental Testing of Young Children (3 credits)
426-322 Art Curriculum and Instruction – Early Childhood (3 credits)
429-322 Music Curriculum and Instruction Early Childhood (3 credits)
433-312 Methods and Materials for the Kindergarten (3 credits)
424-324 Creative Dramatics and Children's Literature (3 credits)
424-325 Creative Movement and Dramatics (3 credits)

Elective Courses **6 credits**

Candidates may select 6 credits from the following list in consultation with the Program Director:

414-340 Education of Exceptional Children (3 credits)
414-443 School-Home Community Relations in Special Education (3 credits)
424-326 Creative Program Skills (3 credits)
429-201 Basic Musicianship (3 credits)
431-322 Teaching French as a Second Language — Early Childhood (3 credits)
433-260 Reading Instruction – Early Childhood (3 credits)
433-331 Mathematics Curriculum and Instruction – Early Childhood (3 credits)
433-371 Science Curriculum and Instruction – Early Childhood (3 credits)
433-381 Social Studies Curriculum and instruction – Early Childhood (3 credits)
433-455 Nutrition, Health Care and the School (3 credits)
433-467 Special Topic: Language, Speech and Hearing Development – Early Childhood (3 credits)

Other elective courses may be taken only with the approval of the Program Director.

5.6 COURSE DESCRIPTIONS

PLEASE NOTE:
Unless otherwise indicated, courses are held on the McGill Campus.

ACADEMIC COURSES ARE DESIGNATED IN THE COURSE LIST BY A † NEXT TO THE COURSE TITLES.

Working teachers who wish to take more than six credits per term must have the written permission of the Associate Dean (Continuing Education).

5.7 NO CANCELLATION POLICY

Although a serious effort will be made not to cancel scheduled campus classes, the Associate Dean reserves the right to cancel courses with exceptionally low enrollment.

LIBERAL ARTS

114 – Classics

† **ANCIENT GREEK HISTORY (3 credits).**

114-201X-71 Wednesdays 6 – 8 p.m. beginning 15 September
DURATION: 13 weeks (26 hours) plus modular instruction

A survey of Ancient Greek History from the origins to Roman conquest of eastern Mediterranean. Political development of Greek city states in archaic period, Persian Wars, rise of Athens and its fall in Peloponnesian War, expansion of Greek civilization by Alexander.
Not open to students who have completed 114-202D in previous years.

101 – History

† **CANADA TO 1867. (3 credits).**

101-202X-61 Tuesdays and Thursdays 6 – 7:30 p.m. beginning 14 September
DURATION: 26 lectures (39 hours)

A survey of the development of Canada, from the pre-Columbian explorations until the Confederation period. Social, economic and political history will be examined in a general way. (Not open to students who have taken History 101-202D).

† **CANADA SINCE 1867. (3 credits).**

101-203Y-61 Tuesdays and Thursdays 6 – 7:30 p.m. beginning 11 January
DURATION: 26 lectures (39 hours)

A survey of the development of Canada from Confederation to the present day. Social, economic and political history will be examined in a general way. (Not open to students who have taken History 101-202D).

† **INTRODUCTION TO GREEK MYTHOLOGY (3 credits).**

114-203X-51 Mondays 6 – 8 p.m. beginning 13 September
DURATION: 13 weeks (26 hours) plus modular instruction.

The origins, formation and transmission of Greek myth. A study of major myths and themes of myth with reference to the literary sources and to Greek art. The cultural values and religious attitudes which the myths reflect.

† **ANCIENT HISTORY (ROMAN) (3 credits).**

114-241Y-61 Tuesdays 6 – 8 p.m. beginning 11 January

DURATION: 13 weeks (26 hours) plus modular instruction

Survey of Roman history from its origins to reign of Constantine. Development of Roman constitution through the kings, republic and its collapse, the principate, its transformation into dominate of Diocletian and Constantine and the expansion of Rome in Italy and the Mediterranean. (Not open to students who have completed 114-202D in previous years.)

† **GREEK DRAMA AND THEATRE (3 credits).**

114-300Y-51 Mondays 6 - 8 p.m. beginning 10 January
DURATION: 13 weeks (26 hours) plus modular instruction

The Greek dramatists, both tragic and comic, in the light of their plays, with special emphasis on the theatrical techniques of the authors and the means of production in the Greek theatre.

† **MODERN GREEK HISTORY: from 1204 to 1821 (3 credits).**

114-403X-61 Tuesdays and Thursdays 6 - 8 p.m.
DURATION: 10 weeks (40 hours) beginning 14 September

The problem of the beginnings of Modern Greece and its relation to the ancient and medieval worlds. The Greek world after 1204: its gradual transformation after the Frankish rule and during the Turkish domination; the historical foundations of modern Greek society in the period of 1453-1669. The neo-Hellenstic "Renaissance" of the 18th century and the progressive development of the national idea.

† **MODERN GREEK HISTORY: from 1821 to 1980 (3 credits).**

114-404Y-61 Tuesdays and Thursdays 6 - 8 p.m.
DURATION: 10 weeks (40 hours) beginning 6 January

The Greek war of independence and the Great Powers 1821-1827; Greek independence and Capodistrias. The years of absolute monarchy and of constitutional monarchy. Political evolution and the national question. Economic development from circa 1875 to the 'victory of the bourgeoisie' (1909). The Balkan Wars and development of a modern state after World War I.

260 - Religious Studies

† **WORLD RELIGIONS - I (3 credits).**

260-254X-71 Wednesdays 6 - 8 p.m. beginning 15 September
DURATION: 15 weeks (30 hours)

Introduction to Hinduism and Buddhism. A consideration of origins, scriptures, philosophies of each. Sources and methods for the teaching of religions, also for general interest.

† **WORLD RELIGIONS - II (3 credits).**

260-255Y-71 Wednesdays 6 - 8 p.m. beginning 12 January
DURATION: 15 weeks (30 hours)

Introduction to Islam with concentration on its origin, beliefs, practices. Sources and methods for the teaching of religion, also for general interest. Focus on modern situation.

† **TOPICS IN CHURCH HISTORY: Conduct and Morality in Historical Perspective (3 credits).**

260-328Y-61 Tuesdays 6 - 8 p.m. beginning 11 January
DURATION: 15 weeks (30 hours)

An examination of problems in human interaction through selected writing by leading Christian thinkers. Among the works to be studied are *The Didache, the letters of Abelard and Heloise, The Enchiridion* by Erasmus, *How to Educate Noble Youths* by H. Zwingli etc.

† **TOPICS IN RELIGION AND THE ARTS: THE RELIGIOUS DIMENSIONS OF MODERN PAINTING, 1850 TO THE PRESENT (3 credits).**

260-347X-61 Tuesdays 6 - 8 p.m. beginning 14 September
DURATION: 15 weeks (30 hours)

Modern religious consciousness expressed in modern art; rediscovery of archaic religious phenomena (fertility, fetishism, nature-worship), use of formal devices in painting to express religious feeling; creation of new iconography in modern painting; the art movement as religious sect. Analysis of paintings from Symbolist, Dadaist, Surrealist, Abstract, Expressionist, contemporary movements.

381 - Consumer Education

† **CONSUMER IN THE MARKET PLACE. (3 credits).**

381-332X-51 Mondays 6:30 - 9:30 p.m. beginning 13 September
DURATION: 13 weeks (39 hours)

A study of the role of the consumer in the economy, factors which influence consumer behaviour, problems faced by the consumer and legislation and agencies concerned with consumer protection.

† **PERSONAL AND FAMILY FINANCE. (3 credits).**

381-333Y-61 Tuesdays 6:30 - 9:30 p.m. beginning 11 January
DURATION: 13 weeks (39 hours)

An examination of the management of family resources. Included: use of credit, purchasing durable goods, insurance, taxes, savings, investment and estate planning.

382 – Nutrition and Diet

† **TOPICS IN HUMAN NUTRITION (3 credits).**

382-401X-81	Thursdays 6:30 – 9:30 p.m. beginning 16 September
DURATION:	13 weeks (39 hours)

Nutrients essential for adolescents; ways of meeting these needs. Nutritional implications of fast food service and a study of the dietary factors involved in the prevention of obesity, dental caries, cardiovascular disease.

† **TOPICS IN FOOD AND NUTRITION (3 credits).**

382-402Y-81	Thursdays 6:30 – 9:30 p.m. beginning 13 January
DURATION:	13 weeks (39 hours)

Nutritional implications of food processing, food additives, early feeding practices. World food problems, food and drug regulations, nutrient labelling and development of nutrition policies and goals.
Prerequisite: 382-401X or other introductory course in nutrition.

EARLY CHILDHOOD AND ELEMENTARY EDUCATION

433 – Mathematics

† **BACKGROUND MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS (3 credits).**

433-230X-61	Tuesdays 4:30 – 7:30 p.m. beginning 14 September
433-230Y-61	Tuesdays 4:30 – 7:30 p.m. beginning 11 January
DURATION:	12 weeks (36 hours)

A course specially designed for elementary school teachers to provide the basic foundations, insight and understanding of the Québec modern elementary mathematics program. Recommended for all elementary school teachers.

† **PERSPECTIVES ON ELEMENTARY MATHEMATICS EDUCATION (3 credits).**

433-433X-61	Tuesdays 4:30 – 7:30 p.m. beginning 14 September
DURATION:	12 weeks (36 hours)

(Prerequisite: 433-331 or 433-332 or equivalent). A course to provide a deeper perspective of modern elementary mathematics education through a study of the active learning approach, use of structured materials, modern mathematics projects and research. Separate sections for early and later childhood if enrolment permits – an elective.

† **SPECIAL TOPICS IN MATHEMATICS EDUCATION (3 credits).**

433-435Y-61	Tuesdays 4:30 – 7:30 p.m. beginning 11 January
DURATION:	12 weeks (36 hours)

Seminars and Workshops on specific topics in Mathematics Education. One to three topics will be chosen for study during the course, from such areas as construction of teaching materials, evaluation, audio-visual techniques, use of calculating instruments, readiness for mathematics concepts, and curriculum development.

433 – Education in the North

† **EDUCATION IN THE NORTH – INTRODUCTION (3 credits).**

433-441X-51	Mondays 6 – 9 p.m. beginning 13 January
DURATION:	12 weeks (36 hours)

Study of Northern schools as unique pedagogical settings; review of physical, economic and human factors affecting curriculum needs in northern areas of the world, particularly remote and Arctic Québec.

433 – Science

TEACHING THE BIOLOGY OF REPRODUCTION AND DEVELOPMENT IN ELEMENTARY SCHOOL. (3 credits).

433-373X-51	Mondays 5 – 8 p.m. beginning 13 September
DURATION:	12 weeks (36 hours)

Methods for teaching the biology of the reproductive process in organisms from simple plants, small and large animals, to man; an examination of the topics and materials dealing with sexuality and human reproduction in the elementary school curriculum. Prerequisite: open to practising teachers only.

† **ECOLOGICAL FEATURES OF OUR NATURAL ENVIRONMENT. (3 credits).**

433-473X-61	Tuesdays 4:30 – 7:30 p.m. beginning 14 September
DURATION:	12 weeks (36 hours)

A lecture, laboratory and field course to train elementary school teachers in the principles and practices of field biology and nature tours. The observation and identification of various organisms and a study of their ecological relationships in the web of life. Field trips. Limited enrolment.

† **ECOLOGICAL PROBLEMS IN OUR ENVIRONMENT (3 credits).**

433-474Y-61 Tuesdays 4:30 – 7:30 p.m. beginning 11 January
DURATION: 12 weeks (36 hours)

A modern study of environmental problems designed for elementary school teachers. The role of man in the web of life in relation to conservation, the population explosion, waste disposal, sewage treatment, air and water pollution, chemical and radiation pollution. Restricted enrolment. (prerequisite: 433-473 formerly 417-405).

430, 433 – Reading

READING INSTRUCTION – EARLY CHILDHOOD (3 credits).

433-260Y-71 Wednesdays 5 – 8 p.m. beginning 12 January
DURATION: 12 weeks (36 hours)

Methods and materials for the teaching of reading in the primary grades.

CORRECTIVE READING INSTRUCTION – EARLY CHILDHOOD (3 credits).

433-261Y-89 PRACTICUM

Instructor's permission required to register. (prerequisites: 433-260 and 433-364)

READING INSTRUCTION – LATER CHILDHOOD (3 credits).

433-262X-71 Wednesdays 5 – 8 p.m. beginning 15 September
433-262S-71 Wednesdays 5 – 8 p.m. beginning 13 April
DURATION: 36 hours

Methods and materials for the teaching of reading in the upper elementary grades.

CORRECTIVE READING INSTRUCTION – LATER CHILDHOOD (3 credits).

433-263X-89 PRACTICUM

Instructor's permission required to register. (prerequisites: 433-262 and 433-364).

† **CHILDREN'S LITERATURE (3 credits).**

433-325X-81 Thursdays 5 – 8 p.m. beginning 16 September
DURATION: 12 weeks (36 hours)

Selection and use of literature suitable for children in the elementary school.

† **LITERATURE FOR YOUNG ADULTS (3 credits).**

425-366Y-81 Thursdays 5 – 8 p.m. beginning 13 January
DURATION: 12 weeks (36 hours)

A study of the strategies of developing reading habits and tastes among high school students. The selection of works in a variety of genres suitable to different abilities and interests will be discussed.

INTRODUCTION TO READING DIAGNOSIS (3 credits).

433-364Y-81 Thursdays 5 – 8 p.m. beginning 13 January
433-364S-08 Thursdays 4:30 – 7:30 p.m. beginning 14 April Lakeshore – John Rennie
DURATION: 36 hours

Pragmatic and theoretical development of various reading tests and remediation techniques. Use of test manuals, articles from research and pedagogical journals and professional texts. Competency in administering tests and in applying instructional techniques will be developed (Pre-requisite: Reading Instruction core courses or permission of program director).

READING INSTRUCTION – HIGH SCHOOL (3 credits).

425-463Y-71 Wednesdays 5 – 8 p.m. beginning 12 January
DURATION: 12 weeks (36 hours)

Methods and materials for the teaching of developmental reading at the high school level.

INTEGRATED LANGUAGE ARTS (3 credits).

433-465Y-51 Mondays 5 – 8 p.m. beginning 10 January
DURATION: 12 weeks (36 hours)

Methods and materials for integrating reading, listening, writing, speaking aspects of communications instruction.

READING IN THE CONTENT FIELDS. (3 credits).

433-466Y-61 Tuesdays 5 – 8 p.m. beginning 11 January
DURATION: 12 weeks (36 hours)

The application of reading strategies to content material in the secondary school based upon a review of research and innovative techniques.

CORRECTIVE READING INSTRUCTION AT THE HIGH SCHOOL LEVEL. (3 credits).

425-467Y-89 PRACTICUM

Reading problems found in remedial classes at the high school level presented in a practicum format covering diagnosis and remediation appropriate for remedial classrooms.

SPECIAL TOPIC: EFFECTIVE CLASSROOM COMMUNICATION (3 credits).

433-467X-51	Mondays 5 – 8 p.m. beginning 13 September
DURATION:	12 weeks (36 hours)

Presents a general theory of effective communication in human relationships, particularly between teacher and students. Specific methods presented will be helpful in: 1) Developing responsibility and independence in students 2) Resolving classroom conflicts through problem solving 3) Working out a "contract" which defines rules for classroom behaviour 4) Non-evaluative listening.

SPECIAL TOPIC: PSYCHOLINGUISTICS IN THE CLASSROOM (3 credits).

433-467Y-51	Mondays 5 – 8 p.m. beginning 10 January
DURATION:	12 weeks (36 hours)

Students will develop an awareness of the psycholinguistic model of language. Particular emphasis will be placed on its classroom implications, such as evaluating students' reading and writing and creating instructional materials.

SPECIAL TOPIC: ADULT LITERACY (3 credits).

433-467X-52	Mondays 5 – 8 p.m. beginning 13 September
DURATION:	12 weeks (36 hours)

SPECIAL TOPIC: CYCLE I READING & WRITING PROGRAMS (3 credits).

433-467X-08	Thursdays 4:30 – 7:30 p.m. beginning 16 September LAKESHORE – John Rennie
DURATION:	12 weeks (36 hours)

SPECIAL TOPIC: READING AND WRITING IN THE ELEMENTARY GRADES (3 credits).

433-467Y-08	Thursdays 4:30 – 7:30 p.m. beginning 13 January LAKESHORE – John Rennie
433-467S-61	Tuesdays 5 – 8 p.m. beginning 12 April
DURATION:	36 hours

SPECIAL TOPIC: LANGUAGE, SPEECH & HEARING DEVELOPMENT – EARLY CHILDHOOD (3 credits).

433-467Y-52	Mondays 5 – 8 p.m. beginning 10 January
DURATION:	12 weeks (36 hours)

An overview of language acquisition and hearing/language/speech problems in children from birth through early childhood. Procedures will be presented for fostering normal development, detecting or preventing problems in hearing, speech, and language, and helping children with these difficulties. The role of the classroom teacher will be stressed.

SPECIAL TOPIC: READING IS A SOCIAL (STUDIES) ACTIVITY (3 credits).

433-467S-62	Tuesdays 5 – 8 p.m. beginning 12 April
DURATION:	36 hours

SECONDARY EDUCATION

436 – Vocational Teacher Education

PREFERENCE WILL BE GIVEN TO STUDENTS ENROLLED IN THE BACHELOR OF EDUCATION (VOCATIONAL) DEGREE PROGRAM.

Students require written authorization from their adviser in order to register.

GRAPHIC ARTS TECHNOLOGY I. (3 credits).

436-207S-61	Tuesdays and Thursdays 5 – 8 p.m. beginning 12 April
DURATION:	10 weeks (60 hours)

An overview course for general technology teachers which examines the basic industrial reproduction processes of lithography, letterpress, screen and gravure. Includes a study of representative equipment and their specifications, development of industrial materials for utilization by secondary school vocational teachers.

FIELD EXPERIENCE IN BUSINESS AND INDUSTRY: OVERVIEW (3 credits)

436-275X-79	Fall term beginning September
436-275Y-79	Winter term beginning January
436-275S-79	Spring Term beginning April
DURATION:	3 weeks in business or industry

Participation and/or observation on location in an industry or business. A study of the total operations of a selected industrial or commercial enterprise. A comprehensive technical report is submitted upon completion of the work study.

FIELD EXPERIENCE IN BUSINESS AND INDUSTRY: OVERVIEW (6 credits).

436-278X-79	Fall term beginning September
436-278Y-79	Winter term beginning January

436-278S-79	Spring term beginning April
DURATION:	6 weeks in business or industry

Participation and/or observation on location in an industry or business. A study of the total operations of a selected industrial or commercial enterprise. Includes an investigation of the interrelationship of specific parts or sub-divisions to the product produced or the service rendered. A comprehensive technical report submitted upon completion of the work-study.

INTRODUCTION TO TECHNOLOGY: SURVEY (3 credits).

436-351X-61	Tuesdays 5 – 8 p.m. beginning 14 September
DURATION:	12 weeks (36 hours)

A course designed to acquaint students with the Introduction to Technology program as taught in Québec secondary schools. Subject matter includes a study of the original development of the program, theoretical framework of this and similar programs and the preparation of sample lessons. Emphasis placed on the interdisciplinary nature of teaching the different categories of technology.

INTRODUCTION TO TECHNOLOGY: SPECIAL THEMES (3 credits).

436-352X-81	Thursdays 5 – 8 p.m. beginning 16 September
436-352Y-61	Tuesdays 5 – 8 p.m. beginning 11 January
DURATION:	12 weeks (36 hours)

Development of one or more of the particular themes found in the Introduction to Technology program (examples include energy, transportation, housing and communication). Emphasis on the presentation, critique and revision of sample lessons and the development of instructional aids and materials. (Pre-requisite: 436-351).

TECHNOLOGY AND MAN. (3 credits).

436-354Y-81	Thursdays 5 – 8 p.m. beginning 13 January
DURATION:	12 weeks (36 hours)

A survey of technical developments from Graeco-Roman times to the present day and their influences on socio-economic conditions. The implication of technological change for man's future welfare.

METHODS OF TEACHING OFFICE PRACTICE AND OFFICE RELATED SUBJECTS. (3 credits).

436-363X-71	Wednesdays 5 – 8 p.m. beginning 15 September
DURATION:	12 weeks (36 hours)

(Prerequisite: Proof of satisfactory standing in a college-level or equivalent course in Office Practice or Secretarial Practice). A study of materials and procedures in the teaching of office oriented subjects including the operation of major office machines, simulation through integrated projects and model office simulations, and the application of these to time block scheduling.

APPROACHES TO TEACHING HOUSING AND DESIGN. (3 credits).

436-375Y-08	Wednesdays 6 – 9 p.m. beginning 12 January LAKESHORE – MacDonald Campus
DURATION:	12 weeks (36 hours)

An analysis of factors influencing the choice of housing and the selection of interior furnishings. Techniques to be used by teachers involved in the housing and design sector of the home economics curriculum. (Prerequisite: 370-341 is recommended).

FIELD EXPERIENCE IN BUSINESS AND INDUSTRY: PROCESS (3 credits).

436-378X-79	Fall term beginning September
436-378Y-79	Winter term beginning January
436-378S-79	Spring term beginning April
DURATION:	3 weeks in business or industry

A work-study experience selected in consultation with an adviser focusing on new equipment, techniques or practices recently introduced into industry or business. The course requirements will also include the preparation and submission of a technical report.

FIELD EXPERIENCE IN BUSINESS AND INDUSTRY: PROCESS (6 credits).

436-379X-79	Fall term beginning September
436-379Y-79	Winter term beginning January
436-379S-79	Spring term beginning April
DURATION:	6 weeks in business or industry

For course description, see 436-378 above.

SPECIAL PROJECT IN VOCATIONAL EDUCATION (3 credits).

436-398X-79	Fall term
436-398Y-79	Winter term
436-398S-79	Spring term

A project related to the student's teaching concentration will be investigated, developed, pro-

duced, implemented, and/or evaluated, depending on the nature of the project. Students must identify the problem or topic to be investigated and obtain approval of the instructor. Includes preparation and submission of a written report.

INDUSTRIAL MANAGEMENT AND PRODUCTION CONTROL. (3 credits).

436-456X-71	Wednesdays 5 – 8 p.m. beginning 15 September
DURATION:	12 weeks (36 hours)

Analysis of production methods, time and motion studies, plant layout and design, quality control, and management techniques in selected industrial enterprises. Simulation in the school setting of industrial production methods.

METHODS OF TEACHING DATA PROCESSING. (3 credits).

436-463Y-71	Wednesdays 5 – 8 p.m. beginning 12 January
DURATION:	12 weeks (36 hours)

Techniques for teaching data processing at the secondary level. A study of special methods and devices used to interpret the fundamentals of data processing as currently used in the business world.

FIELD EXPERIENCE IN BUSINESS AND INDUSTRY: METHODOLOGY (3 credits).

436-477X-79	Fall term beginning September
436-477Y-79	Winter term beginning January
436-477S-79	Spring term beginning April
DURATION:	3 weeks in business or industry

A work-study experience involving observation and evaluation of training techniques and pedagogical principles used by business or industry in the preparation of personnel for specified tasks. Includes preparation and submission of a technical report.

FIELD EXPERIENCE IN BUSINESS AND INDUSTRY: METHODOLOGY (6 credits).

436-478X-79	Fall term beginning September
436-478Y-79	Winter term beginning January
436-478S-79	Spring term beginning April
DURATION:	6 weeks in business or industry

A work-study experience involving observation and evaluation of training techniques and pedagogical principles used by business or industry in the preparation of personnel for specified tasks. Includes preparation and submission of a technical report.

SELECTED STUDIES IN BUSINESS AND INDUSTRY. (3 credits).

436-482X-79	Fall term beginning xx September
436-482Y-79	Winter term beginning xx January
436-482S-79	Spring term beginning xx April
DURATION:	minimum of 36 hours

A specially designed course related to the teaching specialties of the individual student. Involves a study of contemporary technological developments from business or industry. Individual assignments.

EDUCATION IN THE ARTS

426 – Art

MATERIALS FEE: Students can expect to pay approximately $10 – $20 for materials in the introductory art courses. Materials for the more advanced courses will be correspondingly higher.

† **STUDIO ART – DRAWING (3 credits)**

426-204X-61	Tuesdays 6 – 9 p.m. beginning 14 September
426-204Y-61	Tuesdays 6 – 9 p.m. beginning 11 January
DURATION:	12 weeks (36 hours)
RESTRICTION:	Maximum 20 students

Development of sound draughtsmanship; exploration of various forms of graphic expression; various media.

† **PAINTING II (3 credits)**

426-205X-81	Thursdays 6 – 9 p.m. beginning 16 September
DURATION:	12 weeks (36 hours)

NOTE: The Thursday Night Painting Classes will be held as a workshop. Each student will work at his or her own level. Restriction: Maximum 20 students.

An investigation of media, tools, techniques primarily through studies of natural forms, the human figure.

† **PAINTING III (3 credits).**

426-304X-81	Thursdays 6 – 9 p.m. beginning 16 September
DURATION:	12 weeks (36 hours)

Continuation of 426-205 with emphasis on drawing and structure. (prerequisite: 426-205)

† **PAINTING IV. (3 credits).**

426-305X-81	Thursdays 6 – 9 p.m. beginning 16 September
DURATION:	12 weeks (36 hours)

Continuation of course 304 with emphasis on advanced composition. (prerequisite: 426-304)

† **PAINTING V. (3 credits).**

426-404X-81	Thursdays 6 – 9 p.m. beginning 16 September
DURATION:	12 weeks (36 hours)

Major problems in graphic expression. A tutorial course where the student selects his instructor. Individual conferences and criticism leads the student to an independent approach to painting. (prerequisite: 426-305)

† **PAINTING VI. (3 credits).**

426-405X-81	Thursdays 6 – 9 p.m. beginning 16 September
DURATION:	12 weeks (36 hours)

The student will be required to work in a variety of sizes up to mural painting. Exploration of selected media and new dimensions of design. (prerequisite: 426-404)

† **GRAPHICS I (PRINTMAKING) (3 credits).**

426-206X-51	T.B.A. beginning September
426-206Y-51	T.B.A. beginning January
426-206S-92	Tuesdays & Thursdays 6 – 9 p.m. beginning 12 April
DURATION:	36 hours
RESTRICTION:	Maximum 12 students

NOTE: The evening graphics classes will be held as workshops. Each student will work at his or her own appropriate level and no student will be permitted to register for more than one level at a time.

An introduction to some graphic media; monoprints; collagraphy, linocuts, woodcuts, etc. A practical study of the various elementary processes. Exhibition of students' work required at the end of the course.

† **GRAPHICS II (PRINTMAKING) (3 credits).**

426-207X-51	T.B.A. beginning September
426-207Y-51	T.B.A. beginning January
426-207S-92	Tuesdays & Thursday 6 – 9 p.m. beginning 12 April
DURATION:	36 hours
RESTRICTION:	Maximum 12 students

Graphics II, III, IV, V, VI will be a combined workshop with a total of 12 students. See 426-206, NOTE.

A study in further graphic media techniques. These may include line engraving, dry point, relief, etching, intaglio, and related processes. Exhibition of students' work required at the end of the course.

† **GRAPHICS III (PRINTMAKING) (3 credits).**

426-394X-51	T.B.A. beginning September
426-394Y-51	T.B.A. beginning January
426-394S-92	Tuesdays & Thursdays 6 – 9 p.m. beginning 12 April
DURATION:	36 hours
RESTRICTION:	Maximum 12 students

Graphics II, III, IV, V, VI will be a combined workshop with a total of 12 students. See 426-206, NOTE.

A continuation in studies of graphic techniques. These may include variations on previous learned techniques, silk screen, viscosity printing, multiple plate work, etc. Exhibition at the end of the course is required. Students may opt to specialize in lithography at this level. The lithography class will be held separately. Check the timetable for appropriate night.

† **GRAPHICS IV (PRINTMAKING) (3 credits).**

426-395X-51	T.B.A. beginning September
426-395Y-51	T.B.A. beginning January
426-395S-92	Tuesdays & Thursdays 6 – 9 p.m. beginning 12 April
DURATION:	36 hours
RESTRICTION:	Maximum 12 students

Graphics I, II, III, IV, V, VI will be a combined workshop with a total of 12 students. See 426-206, NOTE.

A more advanced study of various graphic media. The student will be expected to be familiar with the standard processes studied in the preceding courses. At this stage the student should begin to concentrate on developing a personal style, incorporating the necessary techniques to make his personal statement.

† **GRAPHICS V (PRINTMAKING) (3 credits).**

426-494X-51	T.B.A. beginning September
426-494Y-51	T.B.A. beginning January
426-494S-61	Tuesdays & Thursdays 6 – 9 p.m. beginning 12 april
DURATION:	36 hours
RESTRICTION:	Maximum 12 students

Graphics I, II, III, IV, V, VI will be a combined workshop with a total of 12 students. See 426-206, NOTE.

An extension of skills learned in Graphics I – IV. Techniques explored may be engraving, silk screen, relief, intaglio, collagraphy, dry point, combination printing. The student will be expected to explore those areas which most closely correspond to his particular graphics style. An exhibition of students' work is required at the end of the course.

† **GRAPHICS VI (PRINTMAKING) (3 credits)**

426-495X-51	T.B.A. beginning September
426-495Y-51	T.B.A. beginning January
426-495S-92	Tuesdays & Thursdays 6 – 9 p.m. beginning 12 April
DURATION:	36 hours
RESTRICTION:	Maximum 12 students

Graphics I, II, III, IV, V, VI will be a combined workshop with a total of 12 students. See 426-206, NOTE.

A further extension of skills learned in Graphics IV. The student is expected to have mastered basic graphic skills and be able to work independently. A competent development of personal style experimentation with, and control over the chosen medium is expected.

† **INTRODUCTION TO CERAMICS (3 credits).**

426-208X-61	Tuesdays 5 – 8 p.m. beginning 14 September
426-208Y-61	Tuesdays 5 – 8 p.m. beginning 11 January
DURATION:	36 hours
RESTRICTION:	Maximum 12 students

A consciousness of the medium is developed through basic ceramic processes; hand building experiences and introduction to wheel thrown constructions.

† **CERAMICS II (3 credits).**

426-209X-81	Thursdays 5 – 8 p.m. beginning 16 September
426-209Y-81	Thursdays 5 – 8 p.m. beginning 13 January
426-209S-61	Tuesdays & Thursdays 5 – 8 p.m. beginning 12 April
DURATION:	36 hours
RESTRICTION:	Maximum 12 students

Ceramics II – IV will be a combined workshop with a total of 12 students.

A combination and concentration of wheel projects. Elementary clay and glaze preparations. (prerequisite: 426-208)

† **CERAMICS III (3 credits).**

426-300X-81	Thursdays 5 – 8 p.m. beginning 16 September
426-300Y-81	Thursdays 5 – 8 p.m. beginning 13 January
426-300S-61	Tuesdays & Thursdays 5 – 8 p.m. beginning 12 April
DURATION:	36 hours
RESTRICTION:	Maximum 12 students

Ceramics II-IV will be a combined workshop with a total of 12 students.

Chemistry of glazes, formation of slips, engobes and glaze. Firing and maintenance of kiln equipment. (prerequisite: 426-209)

† **CERAMICS IV (3 credits).**

426-309X-81	Thursdays 5 – 8 p.m. beginning 16 September
426-309Y-81	Thursdays 5 – 8 p.m. beginning 13 January
426-309S-61	Tuesdays & Thursdays 5 – 8 p.m. beginning 12 April
DURATION:	36 hours
RESTRICTION:	Maximum 12 students

Ceramics II-IV will be a combined workshop with a total of 12 students.

Chemistry of glazes. Emphasis placed on lab work. Firing and maintenance of kiln and equipment. (prerequisite: 426-300)

† **BASIC ART MEDIA (3 credits).**

426-241X-61	Tuesdays 6 – 9 p.m. beginning 14 September
DURATION:	12 weeks (36 hours)
RESTRICTION:	Maximum 20 students. Not open to students who have taken 426-296

A course designed for the classroom teacher to develop sensitivity to visual design. A program of experimentation in a variety of art media suitable for application to art in the classrooms of elementary schools.

† **BASIC DESIGN (3 credits).**

426-296X-61	Tuesdays 6 – 9 p.m. beginning 14 September
426-296Y-61	Tuesdays 7 – 10 p.m. beginning 11 January
DURATION:	12 weeks (36 hours)
RESTRICTION:	Maximum 20 students

Exploration of the basic elements of visual art through two dimensional compositions and three dimensional constructions. Investigation of materials and tools and the processes of manipulating and relating materials.

ART CURRICULUM AND INSTRUCTION – SECONDARY SCHOOL. (3 credits).

426-473Z-61	Tuesdays 5 – 8 p.m. beginning 14 September
DURATION:	12 weeks (36 hours)

A preparatory course for teaching Art in the secondary school. A study of the problems and needs of the pupil and the development of art programs suitable for the adolescent. Course is integrated with field experience. (Permission of instructor is required).

424 – Drama

MUSICAL THEATRE IN THE SCHOOL. (3 credits).

424-395Y-81 Thursdays 4:30 – 7:30 p.m. beginning 13 January
DURATION: 12 weeks (36 hours)

Introduction to the concepts of musical theatre using dramatic content inherent in everyday situations. Emphasis will be placed on helping elementary and secondary teachers develop, construct and present a musical.

SPEECH IN DRAMA EDUCATION (3 credits).

424-396X-71 Wednesdays 4:30 – 7:30 p.m. beginning 15 September
DURATION: 12 weeks (36 hours)

Training activities to develop the potential of the voice in speech and drama; a study of the elements of voice production in teaching public speaking and drama.

IMPROVISATION AND THEATRE ARTS FOR THE CLASSROOM. (3 credits).

424-494X-81 Thursdays 5 – 8 p.m. beginning 16 September
DURATION: 12 weeks (36 hours).

(Preequisite: 427-394 or 427-594). A course beyond the introductory level to provide further perspectives on the teaching of drama and the teaching of improvisation. Instruction and practice in Play production will be included.

LEADING TECHNIQUES IN DRAMATIC FORMS. (3 credits).

427-496Y-71 Wednesdays 4:30 – 7:30 p.m. beginning 12 January
DURATION: 12 weeks (36 hours)

A course for students, teachers and group leaders in developing drama techniques for the teaching of drama in schools; various dramatic forms and play production suitable in varying group situations. (prerequisite: 427-394/427-494)

451 – Education in Dance

RHYTHMIC ACTIVITIES. (3 credits).

451-202X-61 Tuesdays and Thursdays 4:30 – 6 p.m. beginning 14 September
DURATION: 12 weeks (36 hours)

Students will develop skill in a wide range of rhythmic activities and demonstrate understanding of the benefits of the inclusion of this type of work in the school curriculum. Students will also have experiences in selecting appropriate music, equipment and activity for different age levels (K – Gr. 11).

DANCE EDUCATION CURRICULUM AND INSTRUCTION. (3 credits).

451-392Y-61 Tuesdays and Thursdays 4:30 – 6 p.m. beginning 11 January
DURATION: 12 weeks (36 hours)

The development of dance programs and teaching methodologies appropriate for different age groups at the elementary and secondaryschool levels. This course includes a field component. (Prerequisite: 451-301/451-301).

429 – Music

† **BASIC MUSICIANSHIP FOR CLASSROOM TEACHERS I (3 credits).**

429-201X-61 Tuesdays 5 – 8 p.m. beginning 14 September
DURATION: 12 weeks (36 hours)
RESTRICTION: Maximum 17 students

Introduction to the elements of music theory through techniques of aural training, sight, singing, keyboard and written applications to be presented as the classroom teacher should teachsuch elements of music to elementary school students.

† **UKULELE FOR CLASSROOM TEACHERS (3 credits).**

429-214X-51 Mondays 5 – 8 p.m. beginning 13 September
DURATION: 12 weeks (36 hours)
RESTRICTION: Maximum 20 students

Students need not have any previous experience in music. The objectives of the course are to teach the basic skills of Ukulele playing (picing and strumming), to present ear training indirectly, to teach the basic concepts of theory, and to increase the enjoyment of music. Musical learning obtained may be transferred to the guitar at a later date.

† **BASIC MUSICIANSHIP FOR CLASSROOM TEACHERS II (3 credits).**

429-301Y-61 Tuesdays 5 – 8 p.m. beginning 11 January (piano)

429-301Y-52 Mondays 5 – 8 p.m.
beginning 10 January
(ukulele)
DURATION: 12 weeks (36 hours)

Advanced course in the study of the elements of music theory through techniques of aural training, sight singing, keyboard or ukulele. (Prerequisites: 429-201 or 429-214; permission of instructor)

MUSIC CURRICULUM AND INSTRUCTION – EARLY CHILDHOOD (3 credits).

429-322S-51 Mondays 5 – 8 p.m.
beginning 11 April
DURATION: 36 hours

Materials, methods, planning and organization of musicial experiences for developing the musical abilities of children to the age of eight through listening, creating, singing, playing instruments, and moving to music.

MUSIC CURRICULUM AND INSTRUCTION – LATER CHILDHOOD (3 credits).

429-332S-51 Mondays 5 – 8 p.m.
beginning 11 April
DURATION: 36 hours

434 – Physical Education

TESTS AND MEASUREMENT IN PHYSICAL EDUCATION (3 credits).

434-207Y-81 Thursdays 4:30 – 7:30 p.m.
beginning 13 January
DURATION: 12 weeks (36 hours)

The function of this course is to acquaint students with the selection, construction and use of tests designed to measure sports skills, motor abilities, physical fitness and related knowledge. It includes an introduction to elementary statistics as related to their use in the physical education teaching situation.

† **INTRODUCTION TO COMMUNITY RECREATION. (3 credits).**

434-290Y-71 Wednesdays 6 – 9 p.m.
beginning 12 January
DURATION: 12 weeks (36 hours)

The need for, scope of, and problems associated with community recreation will be studied. The relationship between the organizational structure and programs offered by a recreation agency will be examined. Students will study the different types of recreation agencies within a community and consider means to coordinate their services.

INTRODUCTION TO OUTDOOR EDUCATION (3 credits).

434-340X-61 Tuesdays
beginning 14 September
DURATION: 12 weeks (36 hours)

A multi-disciplinary approach to the outdoors as a natural teaching environment; study of various program models and their practical application in selected settings; guiding principles for planning and organization; survey of current trends; development of resource materials; field experience. (Prerequisites: 413-204 & 435-295).

† **SCIENTIFIC PRINCIPLES OF ATHLETIC TRAINING (3 credits).**

434-495X-51 Mondays
beginning 13 September
DURATION: 12 weeks (36 hours)

Application of physiological and kinesiological principles in the selection, administration and evaluation of athletic conditioning programs; specific topics studied will include circulorespiratory training, intermittent training, isometric training, weight training, calisthenic principles and circuit training methods.

† **PHYSICAL EDUCATION FOR EXCEPTIONAL CHILDREN (3 credits).**

434-496Y-61 Tuesdays 6 – 9 p.m.
beginning 11 January
DURATION: 12 weeks (36 hours)
RESTRICTION: Maximum 20 students

Identification, evaluation, and remediation techniques basic to the development of effective physical education programs for educable mentally retarded children and children with specific learning disabilities; Progressive motor learning experiences related to body image, spatial relations, eye-hand coordination, and balance will be developed, applied and evaluated. (Prerequisite: 434-342).

SOCIAL-PSYCHOLOGY OF SPORT (3 credits).

434-498X-81 Thursdays
beginning 16 September
DURATION: 12 weeks (36 hours)

This course is concerned with the social and psychological aspects of participationin physical activity and sport. It examines the application of sociological and psychological knowledge and methodology within sport and the findings of such sport and related physical activity research. (Prerequisite: 414-260).

COMPARATIVE PHYSICAL EDUCATION AND RECREATION (3 credits).

434-499X-71	Wednesdays 6 - 9 p.m. beginning 15 September
DURATION:	12 weeks (36 hours)

A comparative study of selected countries analyzing and comparing those social institutions which affect the development of physical education and recreation programs.

RELIGION AND PHILOSOPHY IN EDUCATION

415 – Catholic Studies

† **PHILOSOPHY OF RELIGION (3 credits).**

415-205Y-51	Mondays 5 - 8 p.m. beginning 10 January
DURATION:	12 weeks (36 hours)

An investigation of the meaning of Religion and its relevance to our age.

† **THE CHURCH AND THE FUTURE (3 credits).**

415-206X-61	Tuesday's 6 - 9 p.m. beginning 14 September
DURATION:	12 weeks (36 hours)
RESTRICTION:	Maximum 26 students

Reflections on future roles and directions for the Church in the light of prevailing and countervailing trends inour society and the values which underlie them.

† **WHO IS CHRIST? (3 credits).**

415-207X-81	Thursdays 5 - 8 p.m. beginning 16 September
DURATION:	12 weeks (36 hours)

An open search for the authentic person of Christ - from Scriptures and present day manifestations.

† **GUIDE TO READING THE BIBLE (3 credits).**

415-290X-51	Mondays 4:30 - 7:30p.m. beginning 13 September
DURATION:	12 weeks (36 hours)

An introduction to the Judaeo-Christian Scriptures with the emphasis upon reading and existential interpretation.

† **THEOLOGY OF PROCLAMATION (3 credits).**

415-391Y-61	Tuesdays 6 - 9 p.m. beginning 11 January
DURATION:	12 weeks (36 hours)
RESTRICTION:	Maximum 25 students

Man's responsibility and involvement in realizing the Divine Plan; how God chooses to depend upon man for the growth of His people towards Him.

† **VARIETIES OF CHRISTIAN WITNESS (3 credits).**

415-397Y-71	Wednesdays 4:30 - 7:30 pm beginning 12 January
415-397Y-08	Mondays 4:30 - 7:30 p.m. beginning 10 January LAKESHORE - John Rennie
415-397Y-07	Saturdays 10 a.m. - 4 p.m. beginning January HULL - Philemon Wright
DURATION:	36 hours

An exploration of divergent paths of Christian Witness as exemplified in the lives and writings of Thomas Merton, contemplative critic, and Daniel Berrigan, poet-activist.

† **ETHICS IN PRACTICE (3 credits).**

415-494Y-61	Tuesday 5 - 8 p.m. beginning 11 January
DURATION:	12 weeks (36 hours)

Fundamental principles of ethics as applied to current moral issues such as abortion, drugs, nuclear war, and discrimination.

421 – Protestant Studies

† **THEMES IN PROTESTANT EDUCATION (3 credits).**

421-302Y-71	Wednesdays 4:30 - 7:30 p.m. beginning 12 January
DURATION:	12 weeks (36 hours)

An introduction to the major themes, in Protestant theology and in Biblical literature, applicable to the curricula approved for use in the Protestant schools of Québec. Themes include the meaning of faith, salvation, church, and the major persons and events in the Old and New Testaments.

422 – Jewish Studies

INTRODUCTION TO TEACHING JEWISH CUSTOMS AND CEREMONIES (3 credits).

422-250Y-	beginning January
DURATION:	12 weeks (36 hours)

An exploration of Judaic concepts and their rationale, as well as religious laws and customs, as these are reflected in Jewish life styles and in the celebration of Jewish holidays. Attention will be given to the integration of this material into general studies programs at elementary and secondary levels.

† **ISSUES IN JEWISH EDUCATION (3 credits).**

422-350S-	beginning April
DURATION:	36 hours

Implications of Jewry's confrontation with modernity on Jewish education. Some issues to be discussed: teaching Jewish tradition in modern era; teaching of Israel and Zionism, transmitting identity and commitment, effects of sociological issues on Jewish schooling.

TEACHING HEBREW AS A SECOND LANGUAGE (3 credits).

422-404S-71	Wednesdays beginning 13 April
DURATION:	36 hours

A study of contemporary methods and theories related to the teaching of Hebrew as a second language in both day schools and supplementary settings.

423 – Philosophy of Education

PHILOSOPHIES OF EDUCATION (3 credits).

423-300X-61	Tuesdays 4:30 – 7:30 p.m. beginning 14 September
DURATION:	12 weeks (36 hours)

An introduction to the ideas of various systematic philosophies of education with emphasis on the different positions taken on the nature and role of education and schooling in contemporary society.

† **THE RELIGIOUS QUEST (3 credits).**

423-309X-07	Saturdays 10 a.m. – 4 p.m. beginning September HULL – Philemon Wright
423-309X-08	Mondays 4:30 – 7:30 p.m. beginning 13 September LAKESHORE – John Rennie
423-309Y-81	Thursdays 4:30 – 7:30 p.m. beginning 13 January
DURATION:	36 hours

An approach to the study of religious experience as expressed in humanity's major religious traditions, especially Christianity, Judaism, Islam, Hinduism and Buddhism.

† **VALUES AND HUMAN SEXUALITY (3 credits).**

423-324X-61	Tuesdays 4:30 – 7:30 p.m. beginning 14 September
DURATION:	12 weeks (36 hours)

Human sexuality in the context of society, moral and religious development. The course will focus on principles and goals underlying values and moral education as applied to sexual behaviour.

INTRODUCTION TO EDUCATIONAL CRITICISM (3 credits).

423-405X-51	Mondays 4:30 – 7:30 p.m. beginning 13 September
DURATION:	12 weeks (36 hours)

A study of contemporary social and educational criticism, and its impact on the teacher and the school. Readings will be drawn from the works of critics representing a variety of viewpoints.

HUMAN VALUES AND EDUCATION. (3 credits).

423-408Y-81	Thursdays 4:30 – 7:30 p.m. beginning 13 January
DURATION:	12 weeks (36 hours)

A study of selected works dealing with moral, religious, social, and political values with a view to determining their relevance to basic educational issues. This course includes a field component.

431 – Education in Second Languages

LINGUISTICS APPLIED TO THE TEACHING OF FRENCH AS A SECOND LANGUAGE (3 credits).

431-301Y-51	Mondays 5 – 8 p.m. beginning 10 January
DURATION:	12 weeks (36 hours)

Introduction to general linguistics; the nature and function of language; the relations of current linguistic theories to the selection, progression, presentation, and fixation of French Program content; examination and preparation of teaching and remedial materials related to French as a Second Language. (Prerequisites: fluency in French; permission of instructor)

SOCIOLINGUISTICS AND SECOND LANGUAGE TEACHING (3 credits).

431-304Y-71	Wednesdays beginning 12 January
DURATION:	12 weeks (36 hours)

General applications of sociolinguistics to teaching a second language. Study of the local sociocultural scene and institutions. Use and preparation of teaching materials. Planning and monitoring a cultural activity with school children. (Prerequisite: fluency in French).

PSYCHOLINGUISTICS AND SECOND LANGUAGE TEACHING (3 credits).

431-305Y-61	Tuesdays 4:30 – 7:30 p.m. beginning 11 January
DURATION:	12 weeks (36 hours)

Exploration of areas in psycholinguistics relevant to second language teaching; theories of

language acquisition, relationship between first and second language learning, student motivation and individual differences in second language learning, problems of meanings various educational aspects of bilingualism. Course to be offered in English. (Prerequisite: Course in Linguistics).

ERROR ANALYSIS AND SECOND LANGUAGE TEACHING. (3 credits).

431-307Y-81	Thursdays 5 - 8 p.m. beginning 13 January
DURATION:	12 weeks (36 hours)

The contrastive analysis and the interlanguage hypotheses; nature and source or linguistic transfer; the significance of errors; error analysis; general and specific implications of error correction in the second language classroom; linguistic and communicative competence. Course to be offered in French. (Prerequisite: One basic course in applied linguistics).

LINGUISTICS APPLIED TO TEACHING ENGLISH AS A SECOND LANGUAGE (3 credits).

431-311X-61	Tuesdays 4:30 - 7:30 p.m. beginning 14 September
DURATION:	12 weeks (36 hours)

Introduction to general linguistics: the nature and function of language; the relations of current linguistic theories to the selection, progression, presentation and fixation of English program content; examination and preparation of teaching, remedial and testing materials related to English as a Second Language. (Prerequisite: One course in General Linguistics).

MEASUREMENT AND EVALUATION AND TEACHING ENGLISH AS A SECOND LANGUAGE. (3 credits).

431-312Y-51	Mondays 5 - 8 p.m. beginning 10 January
DURATION:	12 weeks (36 hours)

Principles of educational measurement applied to the teaching of esl; types of ESL tests and examinations; analysis of commercially-prepared tests; practice in preparing, administering, and scoring periodical examinations; qualities of good test items in ESL, from the point of view of short- and long-term objectives and levels of learning in ESL. (Prerequisites: An introductorycourse in general or applied linguistics; permission of the instructor).

ANIMATION TECHNIQUES FOR SECOND LANGUAGE TEACHING (3 credits).

431-340X-71	Wednesdays 5 - 8 p.m. beginning 15 September
DURATION:	12 weeks (36 hours)

Exploration and demonstration of animating procedures and techniques for enlivening second language learning and for integrating it into the child's general development. Workshops and preparation of pedagogical materials suitable for use in the classroom. (Offered in French).

THE BILINGUAL CLASS I (3 credits).

431-345S-51	Mondays 5 - 8 p.m. beginning 11 April
DURATION:	36 hours

A study of the various models of bilingual education programs at the elementary school; an examination of the methods and materials used in primary grades to teach French language arts and to impart in French the other components of the curriculum of this level, to pupils whose mother tongue is not French; planning teaching units; observation of bilingual classes and "French immersion classes." (Prerequisites: a high degree of French fluency, a course in French methodology and a course in applied linguistics).

THE BILINGUAL CLASS II (3 credits).

431-346X-81	Thursdays 5 - 8 p.m. beginning 16 September
DURATION:	12 weeks (36 hours)

A study of the various models of bilingual education programs for later childhood; an examinationof the methods and materials used at that level to teach French language arts and to develop French language skills via the teaching of the other components of the curriculum to pupils whose mother tongue is not French; planning teaching units; observation of various types of "French immersion classes". (Pre-requisites: a high degree of French fluency and a course in applied linguistics).

TEACHING ENGLISH AS A SECOND LANGUAGE - SECONDARY SCHOOLS (3 credits).

431-358X-81	Thursdays 5 - 8 p.m. beginning 16 September
DURATION:	12 weeks (36 hours)

Principles of ESL teaching; objectives and curriculum; language skills at secondary level; examination and preparation of teaching and testing materials; lesson planning.

PRACTICUM IN SECOND LANGUAGE TEACHING I (3 credits).

431-360X-78	Fall Practicum
431-360Y-78	Winter Practicum

Supervised practice in the application of language teaching and learning theories: focus on the design and use of teaching units, the organization of communication activities, the selection and use of diagnostic and remedial materials. Course offered in either English or

French. (Prerequisite: at least one course in the methodology of second language teaching permission of program director).

PRACTICUM IN SECOND LANGUAGE TEACHING II (3 credits).

431-361X-78	Fall Practicum
431-361Y-78	Winter Practicum

Supervised practice in the application of language teaching and learning theories: focus on curriculum development, and on the production of instructional, diagnostic and remedial materials. (Prerequisite: at least one course in the methodology of second language teaching permission of program director).

TEACHING FRENCH AS A SECOND LANGUAGE – SECONDARY SCHOOL. (3 credits).

431-372S-61	Tuesdays 5 – 8 p.m. beginning 12 April
DURATION:	36 hours

Principles of second language teaching; objectives and curriculum; language skills at secondary level; instructional strategies; examination and preparation of teaching and testing materials; the use of audio-visual aids; lesson planning; training in micro-teaching situations.

TEACHING FRENCH TO NON-FRANCOPHONE ADULTS (3 credits).

431-380X-61	Tuesdays 5 – 8 p.m. beginning 14 September
DURATION:	12 weeks (36 hours)

Application of the theories and procedures of adult education to the teaching of French to non-Francophone adult learners. Activities include setting objectives for various needs and different levels of learning, designing specific curriculum, and preparing materials. Attention willbe given to different approaches to teaching language and communication skills to adults, and to developing cultural insights. Prerequisite: Fluency in French.

SPECIAL TOPIC IN SECOND LANGUAGE TEACHING: LINGUISTICS FOR TEACHERS (3 credits).

431-449X-	TBA beginning September
431-449S-61	Tuesdays 5 – 8 p.m. beginning 12 April
DURATION:	36 hours

The objective of this course is to increase the awareness of ESL teachers of some of the most important aspects of language in general and English in particular that are relevant to their work.

411 – Administration and Policy Studies in Education

ADMINISTRATION OF EDUCATION IN QUEBEC (3 credits).

411-394Y-I61	Tuesdays 5 – 8 p.m. beginning 11 January
DURATION:	12 weeks (36 hours)

An introduction to the system of administration and decision-making in the public schools of the province as these relate to teachers. Consideration will be given to staff relationships, the politics of education, finance and administrative roles at all levels of the system.

SOCIETY AND CHANGE (6 credits)

414-461Z-71	Wednesdays 5 – 8 p.m. beginning 15 September
DURATION:	24 weeks (72 hours)

A consideration of major western social institutions including education, medicine, churches, social welfare, marriage and the family, their relationships to the process of change. The evolution of social change is seen from an historical as well as a current point of view.

EDUCATIONAL PSYCHOLOGY AND COUNSELLING

449 – College Teaching

APPROACHES TO COLLEGIAL LEARNING AND TEACHING (3 credits).

449-581Y-81	Thursdays 5 – 8 p.m. beginning 13 January
DURATION:	12 weeks (36 hours)

This course deals with approaches to the college sector – e.g. the computer approach. Content varies with the nature of the group under instruction and the state of instructional development in the colleges.

MANAGING A LEARNING SYSTEM (3 credits).

449-587X-61	Tuesdays 7 – 10 p.m. beginning 14 September
DURATION:	12 weeks (36 hours)

An introduction to the theory and practical skills necessary for managing a learning system defined as: (1) teacher (2) learner (3) classroom (4) larger college community. The course has four distinct sections: (1) searching for better ways to manage the college classroom (2) systems thinking and the management of adult education (3) managing relationships in the classroom (4) effects of personal learning style on teaching style.

INSTRUCTIONAL DESIGN IN HIGHER EDUCATION (3 credits).

449-588Y-61	Tuesdays 5 - 8 p.m. beginning 11 January
DURATION:	12 weeks (36 hours)

Exploration of theories, concepts, methods, and procedures underlying instructional development and design with particular attention to acquiring an understanding of selected instructional systems (e.g., audiotutorial instruction, modular instruction, individually-prescribed instruction (Keller Plan, instructional television, computer-assisted instruction, etc.). Synthesis of acquired theories and instructional design components in the design of a learning system relevant to individual teaching situations.

TEACHING AND LEARNING: SYSTEMATIC INSTRUCTION IN HIGHER EDUCATION (3 credits).

449-589X-99	Tutorial beginning September
449-589Y-99	Tutorial beginning January
449-589S-99	Tutorial beginning April
DURATION:	equivalent 36 hours

Participants, working under guidance with modules especially designed for the use of college and university teachers, explore a theory of systematic instruction while meeting some particular curricular needs. The course is individualized to the point where single tutorials and small-group workshops may be arranged according to the requirements of each learner.

STUDIES IN THE DISCIPLINE FOR MORE EFFECTIVE TEACHING I (3 credits).

449-590X-99	Tutorial beginning September

This course provides an opportunity for participants, in consultation with the program director, to engage in selected aspects of the work of subject departments with a view to updating or extending basic subject knowledge or of participating in departmental approaches to learning and teaching in their special subjects.

PRACTICUM IN THE COLLEGE SETTING (6 credits).

449-592Z-99	Tutorial beginning September
DURATION:	24 weeks (72 hours)

Development of a teaching or evaluation schema relative to the discipline taught, together with a supervised practicum designed to improve, by methods of critical analysis, the ability to implement a teachign or evaluation schema. The candidate works with one or more tutors throughout the process. (Prerequisite: 449-587, 449-588).

412 – Counsellor Education

GROUP PROCESSES. (3 credits).

412-304X-61	Tuesdays 6 - 9 p.m. beginning 14 September
DURATION:	12 weeks (36 hours)

This course is intended to make the student familiar with group organization and operation as they relate to the schools. Interpretation of group interaction and typical roles played by members in groups. (Limited Enrolment).

412, 416 – Human Relations and Family Life Education

PRINCIPLES OF HELPING RELATIONSHIPS (3 credits).

412-401X-51	Mondays 6 - 9 p.m. beginning 13 September
DURATION:	12 weeks (36 hours)
RESTRICTION:	Maximum 25 students

Basic principles of human relationship and communication skills, to be approached from a theoretical and experiential view point. An emphasis will be given to training in basic listening skills, interviewing techniques, and the interpretation of non-verbal behaviour in communication.

GROUP PROCESSES AND THE INDIVIDUAL (3 credits).

412-402Y-61	Tuesdays 6 - 9 p.m. beginning 11 January
DURATION:	12 weeks (36 hours)
RESTRICTION:	Maximum 20 students

A laboratory course in which participants observe individual dynamics within a group setting as well as understanding the developmental phases of the group. Participants will be encouraged to experiment with their own behaviour, in order to increase their own awareness of functioning.

HUMAN SEXUALITY FOR THE HELPING PROFESSIONS (3 credits).

412-403S-51	Mondays 6 — 9 p.m. beginning 11 April
DURATION:	36 hours
RESTRICTION:	Maximum 25 students

Explore historical, biological, antropological, psychological and sociological perspectives of human sexual development. Sexual dysfunctions and approaches to sex therapy will be discussed. Attitudes toward sexuality held by professional helpers will be examined relative to their implications for the learning and teaching of human sexuality and sex therapy.

PRACTICUM IN INTERVIEWING SKILLS (3 credits).

412-404Y-51 Mondays 6 – 9 p.m.
beginning 10 January
DURATION: 12 weeks (36 hours)
RESTRICTION: Maximum 15 students

Enables students to become practitioners in the field of Applied Social Sciences. Theoretical principles of the helping relationship will be applied in particular situations. Demonstration, lecture, role-playing and psychodrama techniques will be used. (prerequisite: 412-401)

ORGANIZATIONAL DEVELOPMENT. (3 credits).

412-406X-61 Tuesdays 6 – 9 p.m.
beginning 14 September
DURATION: 12 weeks (36 hours)
RESTRICTION: Maximum 25 students

This course will critically examine the interrelationships of individuals, groups, and organizational systems. Various models for understanding group and individual functions within an organization will be studied. Specific intervention techniques by the practitioner to effect changes within the organization will be identified.

PRACTICUM IN GROUP LEADERSHIP SKILLS. (3 credits)

412-407S-61 Tuesdays 6 – 9 p.m.
beginning 12 April
DURATION: 36 hours
RESTRICTION: Maximum 25 students

This course will be concerned with the practical aspects of group leadership, group design and planning. Candidates will set up groups, conduct such groups over a number of sessions, and assess these groups according to the theoretical models covered inthe pre-requisite course. (prerequisite: 412-402)

HUMAN DEVELOPMENT (3 credits)

416-460Y-81 Thursdays 6 – 9 p.m.
beginning 13 January
DURATION: 12 weeks (36 hours)
RESTRICTION: Maximum 30 students

A review of current theory and knowledge of human development through the life cycle. Particular attention is given to emotional and social development. All major age-stages are considered. Emphasis is placed onthe effects of interaction between individuals of these different age groupings.

SOCIETY AND CHANGE (6 credits).

411-461Z-71 Wednesdays 5 – 8 p.m.
beginning 15 September
SEE ADMINISTRATION & POLICY STUDIES

A consideration of major western social institutions including education, medicine, churches, social welfare, marriage and the family, their relationships to the process of change. The evolution of social change is seen from an historical as well as a current point of view.

PERSONAL AWARENESS AND LEADERSHIP IN FAMILY LIFE EDUCATION. (3 credits).

416-463X-81 Thursdays 6 – 9 p.m.
beginning 16 September
DURATION: 12 weeks (36 hours)
RESTRICTION: Maximum 25 students

A review of the lifestyles and cultural traits in comtemporary urban Québec society and their impact on "family life development". Those leadership intervention and confrontation skills which are useful for small groups will be emphasized.

416 – Educational Psychology

CREATIVITY AND ITS CULTIVATION (3 credits).

416-249Y-51 Mondays 5 – 8 p.m.
beginning 10 January
DURATION: 12 weeks (36 hours)

Survey of recent research and theory concerning creativity, with special attention to creativity in school-age children; treats problems of defining and assessing creativity, the relationship between creativity and intelligence, the nature of the creative process and personality and creative behaviour. Methods of echanging creativity will be examined, emphasizing ways of facilitating creativity in a school setting. *(Includes a field experience component.)*

MEASUREMENT AND EVALUATION IN EDUCATION (3 credits).

416-304Y-51 Mondays 4:30 – 7:30 p.m.
beginning 10 January
DURATION: 12 weeks (36 hours)

The purposes of examinations. causes of complaints about examinations. Equalizing means and dispersions in distribution of marks. Standardized scores. The percentile system. Essay and objective-type examinations. Taxonomies of educational objectives. Validity and reliability: item analysis.

THE PSYCHOLOGICAL BASIS OF VALUES AND MORAL EDUCATION (3 credits).

416-306X-71 Wednesdays 4:30 – 7:30 p.m.
beginning 15 September
DURATION: 12 weeks (36 hours)

A study of how a child's sense of morality is achieved and the possible applications of theory and research to education. Cognitive developmental psychology is a primary focus,

although other theories will also be explored. Prerequisite: Knowledge of the theories of Jean Piaget and permission of the instructor.

ADOLESCENCE AND THE PROCESS OF EDUCATION (3 credits)

416-377X-51	Mondays 5 – 8 p.m. beginning 23 September
DURATION:	12 weeks (36 hours)

Development of personality and social behaviour in adolescence. Problems relating to self-concept, academic achievement, relationships with others, and development of values in a changing culture. Some attention to current criticisms of the school as an agency involved in adolescent development.

THE NATURE OF INTELLIGENCE (3 credits).

416-396X-61	Thursdays 4:30 – 7:30 p.m. beginning 14 September
DURATION:	12 weeks (36 hours)

The nature, development and measurement of intelligence in a school setting. Intelligence and learning; creativity and intelligence; intelligence and cultural deprivation. The role of the school in developing intelligence.

SEMINAR IN SPECIAL TOPICS: Computers in Education (3 credits).

416-495X-71	Wednesdays 4:30 – 7:30 p.m. beginning 15 September
DURATION:	12 weeks (36 hours)

PSYCHOLOGY AND INSTRUCTIONAL DESIGN (3 credits).

416-535X-71	Wednesdays 7 – 10 p.m. beginning 15 September
DURATION:	12 weeks (36 hours)

This course draws on the fields of learning theory, developmental psychology, and measurement to focus onthe tasks of constructing instructional materials. Areas to be considered include behaviour analysis, concept formation, and test construction.

EDUCATIONAL MEASUREMENT (3 credits).

416-575Y-71	Wednesdays 7 – 10 p.m. beginning 12 January
436-575S-71	Wednesdays 5 – 8 p.m. beginning 13 April
DURATION:	36 hours

Statistical measurements in education, graphs, charts, frequency distributions, central tendencies, dispersion, correlation, and sampling errors.

Educational Media

EDUCATIONAL MEDIA I (3 credits).

432-204X-61	Tuesdays 6 – 9 p.m. beginning 14 September
DURATION:	12 weeks (36 hours)
RESTRICTION:	Maximum 20 students

Application of educational media to teaching and learning situations; rationale and underlying principles, the sources, selection production, effective utilization and evaluation of the media.

MEDIA AND INSTRUCTIONAL DESIGN (3 credits).

432-209Y-61	Tuesdays 6 – 9 p.m. beginning 11 January
DURATION:	12 weeks (36 hours)

The examination and application of the systematic planning techniques necessary in the design, development and validation of effective instructional materials. (prerequisite: 432-204)

GRAPHICS DESIGN FOR MEDIA PRODUCTION. (3 credits).

432-220Y-51	Mondays 6 – 9 p.m. beginning 10 January
DURATION:	12 weeks (36 hours)

An introduction to practical skills in graphic design for classroom instructional purposes, including learning basic skills in lettering, simple sketching, colouring techniques, for use in design layout of printed instructional materials, display and projected media.

PHOTOGRAPHY I (3 credits).

432-303X-71	Wednesdays 4:30 – 7:30 p.m. beginning 15 September
DURATION:	12 weeks (36 hours)
RESTRICTION:	Maximum 15 students

An introduction to the history, utilization, research, and principles of photography as it relates to education, with an emphasis on developing the visual literacy and basic photographic techniques of teachers. The course will consist of lectures, seminars and production exercises.

EDUCATIONAL MEDIA II (3 credits).

432-304S-61	Tuesdays 6 – 9:30 p.m. beginning 12 April
DURATION:	10 weeks (36 hours)
RESTRICTION:	Maximum 20 students

A continuation of the study of Educational Media in teaching and learning with an emphasis on more complex audio-visual productions. (Prerequisite: 432-204)

EDUCATIONAL TELEVISION I (3 credits).

432-306Y-71	Wednesdays 6 – 9 p.m. beginning 12 January
DURATION:	12 weeks (36 hours)
RESTRICTION:	Maximum 15 students

A survey of the development of educational television. Short productions using single camera and portable TV systems.

MANAGEMENT OF EDUCATIONAL MEDIA SERVICES. (3 credits).

432-406S-81	Thursdays 6 – 9:30 p.m. beginning 14 April
DURATION:	10 weeks (36 hours)

An examination of the development and management of media services, including the design of instructional facilities, the administration of materials, equipment and production services, budgeting, personnel management, and the promotion of effective media utilization.

EDUCATIONAL TELEVISION II (3 credits).

432-407S-71	Wednesdays 6 – 9:30 p.m. beginning 13 April
DURATION:	10 weeks (36 hours)
RESTRICTION:	Maximum 15 students

Advanced studies, of television program design and production for instructional purposes. Focus on four types of presentation: exploratory, documentory, segmented and dramatic. Production steps include planning, shooting, editing, revision and critical evaluation.

MEDIA CURRICULUM AND INSTRUCTION: ELEMENTARY (3 credits).

432-440X-51	Mondays 6 – 9 p.m. beginning 13 September
DURATION:	12 weeks (36 hours)

A materials centered workshop approach to teaching elementary school children how to utilize and produce media materials as part of their curriculum and extra-currular activities. (Prerequisites: 432-204 or 432-303)

Special Education

EDUCATION OF EXCEPTIONAL CHILDREN (3 credits).

414-340X-61	Tuesdays 6 – 9 p.m. beginning 14 September
414-340S-61	Tuesdays 6 – 9 p.m. beginning 12 April
DURATION:	36 hours

Introduction to the education of exceptional children; characteristics, classification, needs of exceptional children, developmental and corrective programs; areas of current research.

GENERAL METHODS IN SPECIAL EDUCATION (3 credits).

414-341X-61	Tuesdays 4:30 – 7:30 p.m. beginning 14 September PSBGM – West Hill High
414-341Y-61	Tuesdays 6 – 9 p.m. beginning 11 January
414-341S-81	Thursdays 6 – 9 p.m. beginning 14 April
DURATION:	36 hours

Class organization, teaching methods, assessments of educational level, setting objectives, grouping, individual programming, and reporting.

ORGANIZATION OF SPECIAL EDUCATION PROGRAMS (3 credits)

414-342X-81	Thursdays 6 – 9 p.m. beginning 16 September
414-342S-71	Wednesdays 6 – 9 p.m. beginning 13 April
DURATION:	36 hours

Needs of EMR, slow-learning and emotionally disturbed children; characteristics; school programs, evaluation of progress, integration into the community.

INTRODUCTION TO DIAGNOSIS AND ASSESSMENT (3 credits).

414-343X-61	Tuesdays 6 – 9 p.m. beginning 14 September
414-343X-52	Mondays 4:30 – 7:30 p.m. beginning 13 September PSBGM – West Hill High
DURATION:	12 weeks (36 hours)

Principles and procedures in the evaluation of pupil growth and achievement. Emphasis on the use and interpretation of tests to be given by the class teacher.

PRACTICUM IN DIAGNOSIS AND ASSESSMENT OF LEARNING PROBLEMS (3 credits).

414-344Y-81	Thursdays 6 – 9 p.m. beginning 13 January
414-344S-61	Tuesdays 4:30 – 7:30 p.m. beginning 12 April PSBGM – West Hill High
DURATION:	36 hours

A supervised practicum in the use of various tests and measures in learning problems of children; developing prescriptive teaching programs. (Prerequisite: 414-343.)

TALENTED AND GIFTED STUDENTS (3 credits).

414-346X-71	Wednesdays 5 – 8 p.m. beginning 15 September
DURATION:	12 weeks (36 hours)

The psychology and education of exceptionally able children. Definitions, assessment, types of programs and goals, and teacher requirements. The course combines theoretical background and practical concerns.

COGNITIVE AND PSYCHOMOTOR PROBLEMS OF EXCEPTIONAL CHILDREN (3 credits).

414-440X-81	Thursdays 6 - 9 p.m. beginning 16 September
414-440S-81	Thursdays 6 - 9 p.m. beginning 14 April
DURATION:	36 hours

Teaching methods appropriate to individual and small group instruction to overcome a variety of learning problems. Emphasis on perceptual difficulties. (prerequisite: 414-341 & 414-342).

BEHAVIOURAL PROBLEMS OF EXCEPTIONAL CHILDREN (3 credits).

414-441X-08	Tuesdays 4:30 - 7:30 p.m. beginning 14 September LAKESHORE John Rennie
414-441Y-61	Tuesdays 6 - 9 p.m. beginning 11 January
DURATION:	12 weeks (36 hours)

Teaching methods appropriate to the needs of pupils with emotional and behaviour problems. Methods presented will include modification techniques.

PSYCHOLOGY OF LEARNING PROBLEMS (3 credits).

414-442X-51	Mondays 6 - 9 p.m. beginning 13 September
414-442Y-08	Thursdays 4:30 - 7:30 p.m. beginning 13 January LAKESHORE John Rennie
414-442S-71	Wednesdays 6 - 9 p.m. beginning 13 April
DURATION:	36 hours

The Learning Process: personality development; perceptual dysfunction, behaviour disorders and other handicapping conditions related to learning.

MATERIALS IN SPECIAL EDUCATION (3 credits).

414-444Y-51	Mondays 6 - 9 p.m. beginning 10 January
DURATION:	12 weeks (36 hours)

A critical examination of materials available for special education programs, commercial and teacher-made materials; the application of A-V techniques to Special Education.

SPECIAL TOPIC: CULTURALLY DISADVANTAGED (3 credits)

414-446X-71	Wednesdays 6 - 9 p.m. beginning 15 September

SPECIAL TOPIC: BEHAVIOUR MODIFICATION (3 credits).

414-446Y-71	Wednesdays 6 - 9 p.m. beginning 12 January
DURATION:	12 weeks (36 hours)

SPECIAL TOPIC: REMEDIATION OF ORAL LANGUAGE IN EXCEPTIONAL CHILDREN (3 credits).

414-446S-51	Tuesdays 6 - 9 p.m. beginning 12 April
DURATION:	36 hours

SPECIAL TOPIC: INDIVIDUALIZED INSTRUCTION (3 credits).

414-446S-08	Tuesdays 4:30 - 7:30 p.m. beginning 13 April LAKESHORE John Rennie
DURATION:	36 hours

GIFTED STUDENTS WORKSHOP (3 credits).

414-457Y-71	Wednesdays 5 - 8 p.m. beginning 12 January
DURATION:	12 weeks (36 hours)

Workshops and practical experience in planning, providing, and evaluating educational offerings to gifted students in supervised demonstration class settings and in small groups. (prerequisite: 414-346).

6 ENGINEERING

Marisa Terrenzio

392-6704

6.1 INTRODUCTION

The 1982-83 evening program in Engineering includes Graduate level courses leading to a M.Eng., courses approved by the Order of Engineers of Québec and other general interest courses.

6.2 COUNSELLING

Counselling is available during regular office hours prior to registration. No counselling will be done during the official registration period.

6.3 COURSE EVALUATIONS

In order to keep in touch with your needs the Centre seeks continuous feedback on its courses. The results of the course evaluations are used for course development, student information and administrative action. To this end students are invited to evaluate their courses each term.

6.4 EXAMINATIONS

A final examination is held at the end of each course. It is normally scheduled for the week following the last lecture. *(Students should not make other commitments for this period until the final exam date is announced by the lecturer.)*

Examinations must be conducted in accordance with university regulations. Students who do not sit required examination(s) must normally repeat the course. Commitments accepted after registration do not normally excuse students from this requirement.

Students will receive written confirmation of their final examination or course results after each term. As the results for each course become available, they will be posted on the notice board at the Centre by student number. Results CANNOT be obtained by telephone.

6.5 LIBRARIES

All students registered in the Engineering Department have full library privileges at McLennan Library and the Engineering Library upon presentation of their student card of admission.

6.6 PREREQUISITES

It is the responsibility of each student to ensure that he has completed the prerequisites listed for the course(s) for which he intends to register.

6.7 REGISTRATION

Registration is on a first come, first served basis, and students should be aware that the number of registrations accepted will be limited. For this reason, early registration is encouraged.

Please see Section 2.4 of the General Information for dates.

Graduate and Undergraduate students taking evening courses for credit are reminded that they MUST REGISTER BOTH WITH THEIR FACULTY AND THE CENTFE FOR CONTINUING EDUCATION.

6.8 SUMMER PROGRAM

A limited selection of courses is available during the summer. The official schedule will only be available in early March. Please enquire with this Department for further details.

6.9 TIMETABLE

A listing of instructors, textbooks, buildings and room numbers for all courses will be distributed at each registration – FALL, WINTER and SUMMER.

The timetable will also contain information on any course or program changes that have come about since the printing of this announcement.

- **COURSES MARKED WITH THIS SYMBOL WILL NOT BE OFFERED IN 1982/83.** Students are invited to show their interest in courses not offered by contacting this Department. If there are enough students, and with sufficient notice, every attempt will be made to offer a particular course.

6.10 MASTER OF ENGINEERING COURSES

The Centre for Continuing Education in cooperation with the Department of Electrical Engineering offers the following graduate level courses which can be credited in the program for the Master of Engineering, Power Systems Option. The requirements of the M.Eng., program B, are the successful completion of nine graduate level courses and an engineering project. Students planning to apply for admission to the Faculty of Graduate Studies and Research must do so immediately after the completion of the FIRST TWO COURSES. The pass mark accepted by the Faculty of Graduate Studies and Research is 65% or a grade of "B".

Prospective M.Eng. students seeking further information should contact:

Power Option Coordinator
Department of Electrical Engineering
McGill University
392-5392

Graduate level courses:

(1) Electrical and Thermal Transients in Power Equipment
(2) Control Rectifier Circuits
- (3) HVAC Power Transmission

- (4) HV Power Switchgear (Substation Apparatus)
- (5) Power System Protection
- (6) Electric Machine Dynamics
- (7) HVDC Power Transmissior
- (8) Power System Operation
- (9) Modern Techniques for Power System Analysis
- (10) Power System Reliability

(See below for course Descriptions)

Master of Engineering courses are also offered in the late afternoon and early evening by the

Dept. of Civil Engineering	–	392-5963
Dept. of Chemical Engineering	–	392-5432
Dept. of Mechanical Engineering	–	392-5473

6.10.1 ORDER OF ENGINEERS OF QUÉBEC

Please enquire with the Order about courses which may be offered in Electrical and Mechanical Engineering to help students preparing to write the professional examinations of the Order of Engineers of Québec.

6.11 GENERAL COURSES

- (11) Industrial Instrumentation
- (12) Industrial Water Pollution Control
- (13) Water Resources Management
- (14) Introduction to Colour Technology Part I
- (15) Introduction to Colour Technology Part II

6.12 COURSE DESCRIPTIONS

6.12.1 ELECTRICAL ENGINEERING

(1) ELECTRICAL AND THERMAL TRANSIENTS IN POWER EQUIPMENT

660-501X-51	Mondays & Wednesdays 6 – 8 p.m.
FEE:	$76.00
DURATION:	20 lectures (40 hours beginning 13 September
PREREQUISITE:	B.Eng., or Equivalent

Brief review of synchroncus machines, transformers, induction motors, transmission and distribution systems and such equipment as are encountered in utility and industrial plants. Detailed treatment will be given to short-circuit calculations, circuit breaker seections, system and equipment grounding, system overvoltage and overcurrent. Other subjects include thermal overload characteristics of apparatus, unbalanced loads and the effects of harmonics on power systems.

(2) CONTROL RECTIFIER CIRCUITS

304-564X-56	Mondays & Wednesdays 8 – 10 p.m.
FEE:	$76.00
DURATION:	20 lectures (40 hours) beginning 13 September
PREREQUISITE:	B.Eng., or Equivalent

Simple polyphase rectifiers. Thyristor characteristics. Fully and semi-controlled bridges, interphase transformers. Commutation, regulation and equivalent circuits. Harmonic content. Active loads. Cyclo-converters.

(3) HVAC POWER TRANSMISSION

304-663
PREREQUISITE: B.Eng., or Equivalent

Design considerations of EHV and UHV power transmission systems: audible noise, radio interference, environmental aspects of transmissionlines. Coordination of system overvoltages with external and internal insulation strengths leading to economic insulation structures based on quantitative evaluation of reliability.

(4) HV POWER SWITCHGEAR (SUBSTATION APPARATUS)

304-665
PREREQUISITE: B.Eng. or Equivalent

Definition of functions, typical connections and layouts of HV substations. Analysis of stresses, definition of parameters and description of designs of circuit breakers, isolating switches, load switches, fuses, lightning arresters and combinations of apparatus. High power testing methods – direct and synthetic. Design of substations, conventional and metal-clad, environmental considerations.

(5) POWER SYSTEM PROTECTION

660-670Y-51	Mondays 6 – 9 p.m.
FEE:	$76.00
DURATION:	13 lectures (40 hours) beginning 10 January
PREREQUISITE:	B.Eng. or Equivalent

Automatic operation and planning of protective relays in order to prevent damage to power system equipment, as well as to execute automatic control actions. Theory and applications will be treated. Protection relative to the operation of power systems; power system components, fault analysis, symmetrical components, relay types and relay systems, protection strategies, and their application.

(6) ELECTRIC MACHINE DYNAMICS

304-662
PREREQUISITE: B.Eng. or Equivalent

Review of electric machine models. Formulation of non-linear differential equations. Solutions through numerical integration, constant speed linearization. Models of control elements, loads,

prime-movers, voltage regulators, transmission networks. Multi-machine power system. Operating point stability. Transient stability analysis. Electromechanical resonance.

(7) HVDC POWER TRANSMISSION

304-664Y-71	Wednesdays 6 – 9 p.m.
FEE:	$76.00
DURATION:	13 Lectures (40 hours) beginning 12 January
PREREQUISITE:	B.Eng., or Equivalent

Principles of HVDC power, transmission: HVDC transmission circuits, bridge convertor operation, thyristor valve developments, control of HVDC systems, protection of lines and convertor stations, harmonic filtering, modelling techniques for performance studies.

• **(8) POWER SYSTEM OPERATION**

304-666
PREREQUISITE: B.Eng., or Equivalent

Power system optimality criteria: economic, environmental, reliability factors. Short and long-term load forecasting; simulation of river flows; economic operations of hydroelectric thermal and hydrosteam systems. Planning of additional equipment by the global and marginal approaches. Siting of new plants. Planning on interconnections; maintenance scheduling.

(9) MODERN TECHNIQUES FOR POWER SYSTEM ANALYSIS

304-667Y-61	Tuesdays & Thursdays 6 – 8 p.m.
FEE:	$76.00
DURATION:	20 lectures (40 hours) beginning 11 January
PREREQUISITE:	B.Eng., or Equivalent

Mathematical descriptions of power systems suitable for computer analysis, and solutions algorithms. Topics will include: matrix algebra, incidence and network matrices, sparse matrix techniques, phase and component representation, short circuit studies, Diakoptics, load flow studies, transient and dynamic stability studies, contingency analysis, state estimation, system identification.

• **(10) POWER SYSTEM RELIABILITY**

660-669
PREREQUISITE: B.Eng., or Equivalent

Review of probability and statistics. Basic reliability static generating capacity planning – capacity tables, adding and deleting units, loss of load probability, load uncertainty. Transmission and distribution reliability – interruption rate, reliability indices, failure bunching. Interconnections – advantages and types of interconnections, reserve sharing. Substation reliability – role of substations, modes of failure, reliability evaluation.

6.12.2 GENERAL COURSES

(11) INDUSTRIAL INSTRUMENTATION

660-003Z-61	Tuesday 6 – 8 p.m.
FEE:	$170.00
DURATION:	25 lectures (50 hours) beginning 14 September
PREREQUISITE:	High School Graduation

(In co-operation with the Instrument Society of America, Montreal Chapter)
Industrial process measurements and automatic process control. The first half of the course describes the principles of, and hardware for, taking pressure, level, temperature, flow and analytical measurements, while the second half describes transmission of signals, automatic control theory, final control elements and computer applications.

• **(12) INDUSTRIAL WATER POLLUTION CONTROL**

660-005
PREREQUISITE: CEGEP Graduation

Environmental and analytical aspects of water pollution; Effluent treatment processes; Industrial applications. The course emphasizes industrial water pollution control processes and practices. Examples and problems discussed are based on actual cases, e.g. Oil refinery wastewater treatment plant; Clarifier design, Selected case treatability studies.

• **(13) WATER RESOURCES MANAGEMENT**

660-006
PREREQUISITE: CEGEP graduation

Examine current practices in stream and reservoir pollution control. Physical and chemical pollution and bacterial contamination will be discussed in terms of strategy and data acquisition. Mathematical modelling of water quality will be introduced. The course will concentrate on developing an understanding of water pollution. All mathematics and chemistry needed will be given in the lectures.

(14) INTRODUCTION TO COLOUR TECHNOLOGY
Part I

662-101X-61	Tuesdays 6 – 9 p.m.
FEE:	$120.00
DURATION:	13 lectures (39 hours) beginning week of 14 September
PREREQUISITE:	CEGEP graduation

This course will be of interest to people in all colour-using industries such as paints and plastics. It will cover the fundamentals of colour-

ing materials – dyes, pigments, raw materials and practical use of the colour index. It will examine the industrial application of colours – colouration of textile fibres, printing inks, fundamentals of paint technology, pigments for plastics and carbonless paper and colour in food, drug and cosmetics.

(15) INTRODUCTION TO COLOUR TECHNOLOGY Part II

662-102Y-61 Tuesdays 6 – 9 p.m.
FEE: $120.00
DURATION: 13 lectures (39 hours) beginning week of 11 January
PREREQUISITE: CEGEP graduation and a knowledge of Introduction to Colour Technology Part I

An extension of Introduction to Colour Technology Part I. This course deals with the various methods of measuring colour and the application of colour measurement to colour matching. It will examine methods for identifying dyestuffs on textile fibres, testing of the fastness properties of colouring matters in paints, inks and plastic materials. The analysis of colouring matters in food, drugs and cosmetics will also be dealt with.

6.13 COURSE LIST BY EVENING AND TIME

Mondays 6 – 9 p.m.
(5) Power System Protection (January 1983)

Mondays & Wednesdays 6 – 8 p.m.
(1) Electrical and Thermal Transients in Power Equipment

Mondays & Wednesdays 8 – 10 p.m.
(2) Control Rectifier Circuits

Wednesdays 6 – 9 p.m.
(7) HVDC Power Transmission (January 1983)

Tuesdays & Thursdays 6 – 8 p.m.
(9) Modern Techniques for Power System Analysis (January 1983)

7 LANGUAGES

Professor P.D. Stewart
Director

Shirley Charron
Administrative Assistant

Louise Marmion
Program Assistant

David Levy
Faculty Lecturer

392-8301

7.1 INTRODUCTION

The Centre's Languages Department offers courses leading to the following Certificates of Proficiency and Diploma:

Certificate of Proficiency:

English
French
German
Italian
Russian
Spanish
Translation

Diploma: Translation

Non-Certificate courses:

Arabic
Armenian (Eastern) & (Western)
Chinese
Comp. Stylistics of English and French
Functional French For Professionals
Greek (Modern)
Hebrew
Hungarian
Japanese
Polish
Portuguese
Yiddish

With the exception of Translation courses and Comparative Stylistics of English and French all courses offered in the Languages Department are open to any interested person who has the required degree of language competence; there are no academic requirements for admission.

7.2 PROGRAM REQUIREMENTS

Please see General Information section 2.6 for Convocation Procedures.

7.2.1 CERTIFICATES OF PROFICIENCY IN ENGLISH AND FRENCH

Candidates for the Certificate of Proficiency in English and in French must complete a total of 270 class-hours if they begin at level One. The 270 hours consist of forty-five hours at Levels One to Four inclusive, plus ninety hours at Level Five. The ninety hour requirement at Level Five includes one oral course and one written course.

Students passing these two Fifth Level courses with a minimum of 75% in each course and who attend at least 2/3 of all lectures will be awarded the Certificate of Proficiency.

The two Fifth Level courses must be taken in the last two years of the Program.

Students will be exempted from Levels One, Two, Three or Four according to the results of the classification test. The requirement of Level Five must be completed by all candidates for the Certificate.

All five levels of English and French are offered three times each year. Terms begin in September, in January and in May. During the January and May terms, only twice-a-week courses are offered.

Students passing the Special Intensive English Day course 684-353, with a minimum of 75%, will be awarded the Certificate of Proficiency.

7.2.2 CERTIFICATES OF PROFICIENCY IN GERMAN, ITALIAN, RUSSIAN AND SPANISH

Candidates for the Certificate of Proficiency in German, Italian, Russian or Spanish must complete a total of 200 class-hours if they begin at Level One.

Students who wish to receive this certificate are required to pass the Fourth Level course with a minimum of 75% and attend not less than 2/3 of the lectures.

Those who have studied these languages at some other Institution may be exempted from one or more levels depending on the progress they have made but must take at least 100 hours at the upper levels at the McGill Centre for Continuing Education within the two proceeding years.

7.2.3 CERTIFICATE OF PROFICIENCY IN TRANSLATION

Prerequisite for Admission: A considerable degree of fluency and correctness in both English and French, especially written.

Applicants for admission must take the Entrance Examination which is held each year in March. The examination fee is $20.00 (non-refundable). Information regarding admission and exact date may be obtained in February. Applicants will be notified by mail of their admission which is valid only for the year the examination is taken. No dictionaries are permitted at this examination.

A Special Entrance Examination is held in conjunction with the regular Entrance Examination for returning students who attended the program no earlier than September 1979, or have been absent from the program for more than one year. Dictionaries will be permitted. The fee for this examination is $25.00 (non-refundable).

After completing First and Second Year, students will normally elect to specialize in English or in French. The Third Year course includes French and English sections.

The Certificate of Proficiency in Translation will be awarded to students who pass the Third Year course with a minimum of 70%. An attendance requirement of not less than 4/5 of all classes held during the year is mandatory. The Certificate Program comprises a total of 240 course hours.

7.2.4 DIPLOMA IN TRANSLATION

The Certificate of Proficiency in Translation is a prerequisite to registering in the Diploma Course.

The Diploma in Translation will be awarded to students who pass this course with a minimum of 70% and who attend at least 4/5 of all classes held during the year.

7.3 CLASSIFICATION TESTS FOR ENGLISH AND FRENCH COURSES

All new students must take a classification test before they are allowed to register for courses. Exceptions will be made if it can be proved that the student has no knowledge of the language. The fee for the test is $5.00 (non-refundable).

Candidates are required to apply for the test in person from 19 July onwards, Monday to Thursday inclusive, from 9:00 a.m. to 6:30 p.m., Friday from 9:00 a.m. to 4:00 p.m. The card obtained at this time will show the date, time and location of the test. Students will not be admitted to the test without it.

Applicants will be notified by mail of the level at which they have been classified a few days after the test. They must then register for courses as soon as possible.

Taking the test will not automatically guarantee a place in a course.

The tests for ENGLISH COURSES will be held on the following dates:

Thursday	5 August 1982 at 7:00 p.m.
Monday	16 August 1982 at 7:00 p.m.
Wednesday	18 August 1982 at 7:00 p.m.

The tests for FRENCH COURSES will be held on the following dates:

Wednesday	4 August 1982 at 7:00 p.m.
Tuesday	10 August 1982 at 7:00 p.m.
Thursday	19 August 1982 at 7:00 p.m.

The classification test tickets for December 1982 will be available from 15 November onwards, Monday to Thursday inclusive, from 9:00 a.m. to 6:30 p.m., Friday from 9:00 a.m. to 4:00 p.m.

The tests for ENGLISH COURSES will be held on the following dates:

Monday	6 December 1982 at 7:00 p.m.
Tuesday	14 December 1982 at 7:00 p.m.

The tests for FRENCH COURSES will be held on the following dates:

Tuesday	7 December 1982 at 7:00 p.m.
Monday	13 December 1982 at 7:00 p.m.

7.4 COURSE DATES

week of 13 September	1982 – X and Z courses commence
week of 22 November	1982 – French for Professionals X courses terminate (10 weeks).
week of 29 November	1982 – X courses terminate (12 weeks)* with the exception of French for Professionals.
week of 6 December	1982 – Z courses final week before Christmas break* (except Monday only classes)
Monday 13 December	1982 – Final class before Christmas break for Monday 'Z' courses because of Thanksgiving holiday.
week of 3 January	1983 – Z courses recommence
week of 17 January	1983 – Y courses commence
week of 7 March	1983 – Z courses (45 hour once-a-week) terminate*
week of 28 March	1983 – Z courses (50 and 100 hour) terminate* 1983 – French for Professionals Y courses terminate (10 weeks).
week of 4 April	1983 – Y courses terminate (12 weeks)* with the exception of French for Professionals
week of 21 March	1983 – Translation courses terminate

*subject to change

7.5 EXAMINATION DATES

There is an examination at the end of all language courses which is compulsory for all students.

The official dates of examinations will be as follows:

all 100-hour Z courses	week of 28 March 1983
all 50-hour Z courses	week of 28 March 1983
all 45-hour twice-a-week X and Y courses	week of 29 November 1982 week of 4 April 1983
all 40-hour twice-a-week X and Y courses	week of 22 November 1982 week of 28 March 1983
all 45-hour once-a-week Z courses	week of 7 March 1983
Translation courses	Commences week of 11 April 1983

*subject to change

7.6 GRADING SYSTEM

The Centre uses the grading system common to the University. The grading system is indicated in Section 2.9.3 of the General Information.

7.7 CREDIT

In special circumstances, students registered in a degree program at McGill University may apply to their Faculty for permission to have courses taken in the Centre's Languages Department for credit. Courses of 45 to 50 hours will be counted for 3 credits and courses of 90 to 100 hours will be counted for 6 credits.

7.8 CONVOCATION

A Spring Convocation is held for students who have successfully completed the requirements for a Certificate or Diploma.

Applications must reach the Centre by 31 March with a cheque for $25.00 made payable to McGill University; from 1 April until 30 April an additional $5.00 late fee will be charged and any applications received after 30 April will not be accepted for Spring Convocation in that year.

For information on Fall Convocation refer to section 2.6 of announcement.

7.9 LIBRARIES

All students registered in the Languages Department have full library privileges at McLennan and Redpath Libraries. It is necessary to present the Student Card of Admission in order to receive a library card. Please phone 392-4936 regarding their business hours.

7.10 TIMETABLE

At the time of registration, a listing of instructors, textbooks, buildings and room numbers for all courses will be distributed. Please ask for a copy.

7.11 COURSE DESCRIPTIONS

• **COURSES MARKED WITH A BULLET WILL NOT BE OFFERED IN THE 1982/83 ACADEMIC YEAR.**

*Courses marked with an asterisk will be repeated in January. (twice weekly - 12 weeks)

CERTIFICATE OF PROFICIENCY PROGRAMS

ENGLISH

***INTENSIVE COURSES**

FEE: $260.00
DURATION: 90 hours (12 weeks) beginning week of 13 September

***REGULAR COURSES**

FEE: $140.00
DURATION: 45 hours (twice-a-week courses: 12 weeks)
45 hours (once-a-week courses: 23 weeks)
beginning week of 13 September

***SPECIAL INTENSIVE DAY COURSE**

FEE: $775.00
DURATION: 225 hours (9 weeks)
SUMMER TERM: beginning 30 June 1982
FALL TERM: beginning 27 September 1982

ENGLISH FIRST LEVEL, INTENSIVE
– Class limited to 20 students

684-210X-51 Mon and Wed 6 - 10 p.m.
PREREQUISITE: A score between 20 and 30 in the Classification Test

Designed to cover First and Second Levels in one session. Only students who are classified at First level but already have a basic knowledge of English will be admitted.

ENGLISH FOR ABSOLUTE BEGINNERS
– Classes limited to 14 students

684-200X-51 Mon and Wed 6 - 8 p.m.
PREREQUISITE: Permission of the department

Designed for students who have had no previous training in English and/or possess little if any knowledge of the language.

ENGLISH FIRST LEVEL, REGULAR
– Classes limited to 20 students

684-211X-51/2 Mon and Wed 6 - 8 p.m.
684-211X-57/8 Mon and Wed 8 - 10 p.m.
684-211X-61 Tue and Thu 6 - 8 p.m.
684-211X-67/8 Tue and Thu 8 - 10 p.m.

One period per week, ending in December

684-211X-01 Saturdays 9 - 1 p.m.

ENGLISH SECOND LEVEL, INTENSIVE
– Classes limited to 25 students

684-220X-51 Mon and Wed 6 - 10 p.m.
PREREQUISITE: A score between 30 and 50 in the Classification Test or a grade of at least 70% in the First Level.

Designed to cover Second and Third Levels in one session. Only students qualified for Second Level will be admitted. Promotion to Fourth Level is based on a grade of at least 65%.

ENGLISH SECOND LEVEL, REGULAR
– Classes limited to 25 students

684-221X-51/2/3 Mon and Wed 6 - 8 p.m.

684-221X-56/7/8/9 Mon and Wed 8 - 10 p.m.
684-221X-61/2/3 Tue and Thu 6 - 8 p.m.
684-221X-67/8/9 Tue and Thu 8 - 10 p.m.

One period per week, ending in December

684-221X-01 Saturdays 9 - 1 p.m.

One period per week, ending in March

684-221Z-81 Thursdays 6 - 8 p.m.

ENGLISH THIRD LEVEL, INTENSIVE
- Classes limited to 25 students

684-230X-51 Mon and Wed 6 - 10 p.m.
684-230X-61 Tue and Thu 6 - 10 p.m.
PREREQUISITE: A score between 50 and 65 in the Classification Test or a grade of at least 70% in the Second Level

Designed to cover Third and Fourth Levels in one session. Only students qualified for Third Level will be admitted. Promotion to Fifth Level is based on a grade of at least 65%.

ENGLISH THIRD LEVEL, REGULAR
- Classes limited to 25 students

684-231X-51/2 Mon and Wed 6 - 8 p.m.
684-231X-57/8/9 Mon and Wed 8 - 10 p.m.
684-231X-61/2/3 Tue and Thu 6 - 8 p.m.
684-231X-67/8/9 Tue and Thu 8 - 10 p.m.

One period per week, ending in December

684-231X-01 Saturdays 9 - 1 p.m.

One period per week, ending in March

684-231Z-67 Tuesdays 8 - 10 p.m.

ENGLISH FOURTH LEVEL, INTENSIVE
- Classes limited to 25 students

684-240X-51 Mon and Wed 6 - 10 p.m.
PREREQUISITE: A score between 65 and 80 in the Classification Test or a grade of at least 70% in the Third Level.

Designed to cover Fourth and Fifth Levels in one session. Only students qualified for Fourth Level will be admitted. Students who complete this course with a minimum grade of 75% may qualify for the Certificate of Proficiency by receiving a grade of 75% in a regular Fifth Level writing course taken in addition to this one.

ENGLISH FOURTH LEVEL, REGULAR
- Classes limited to 25 students

684-241X-51/2/3 Mon and Wed 6 - 8 p.m.
684-241X-57/8/9 Mon and Wed 8 - 10 p.m.
684-241X-61/2/3 Tue and Thu 6 - 8 p.m.
684-241X-67/8/9 Tue and Thu 8 - 10 p.m.

One period per week, ending in December

684-241X-01 Saturdays 9 - 1 p.m.

One period per week, ending in March

684-241Z-71 Wednesdays 6 - 8 p.m.
684-241Z-87 Thursdays 8 - 10 p.m.

ENGLISH FIFTH LEVEL,
- Classes limited to 25 students

ATTENDANCE REQUIREMENT: Not less than 2/3 of lectures

Students entering the Fifth Level may choose the course best suited to their needs among the following:

ENGLISH FIFTH LEVEL, INTENSIVE

684-350X-51 Mon and Wed 6 - 10 p.m.

Designed to cover two Fifth Level courses in one session. Only students qualified for Fifth Level will be admitted. A student who completes this courses with a minimum grade of 75% may qualify for the Certificate of Proficiency.

ENGLISH COMPOSITION

684-351X-51 Mon and Wed 6 - 8 p.m.
684-351X-57 Mon and Wed 8 - 10 p.m.
684-351X-61 Tue and Thu 6 - 8 p.m.
684-351X-67 Tue and Thu 8 - 10 p.m.

One period per week, ending in December

684-351X-01 Saturdays 9 - 1 p.m.

One period per week, ending in March

684-351Z-77 Wednesdays 8 - 10 p.m.

Encourages students to increase their overall ability in English by acquiring more skill in written expression. The basic principles of composition - unity, coherence and adequate development of the subject matter - will be taught and practised. In addition paraphrasing, letter and report writing, summarizing and précis writing will be covered.

ENGLISH BUSINESS WRITING

684-352X-57 Mon and Wed 8 - 10 p.m.
684-352X-61 Tue and Thu 6 - 8 p.m.

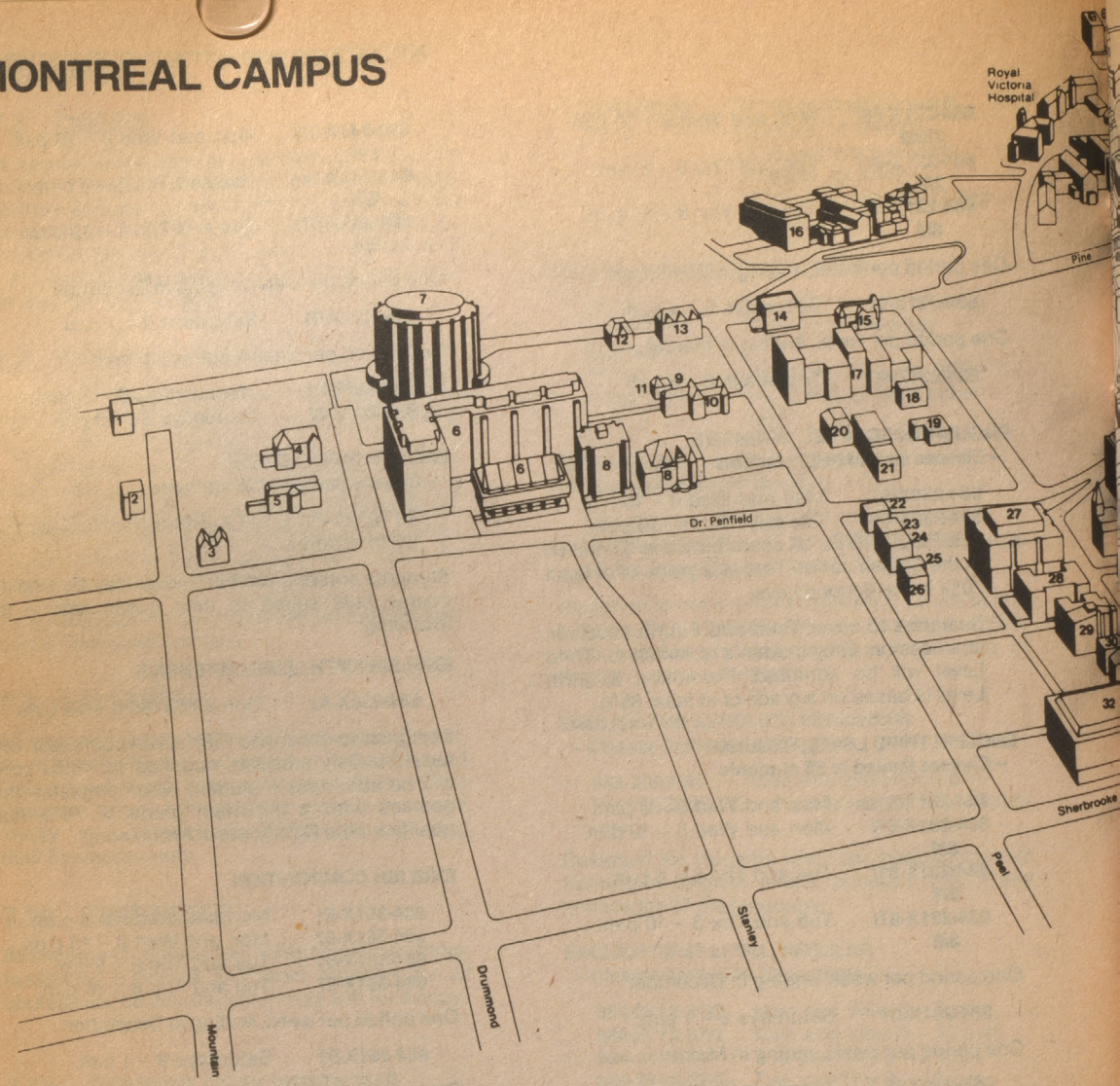
One period per week, ending in December

684-352X-01 Saturdays 9 - 1 p.m.

One period per week, ending in March

684-352Z-51 Mondays 6 - 8 p.m.

MONTREAL CAMPUS



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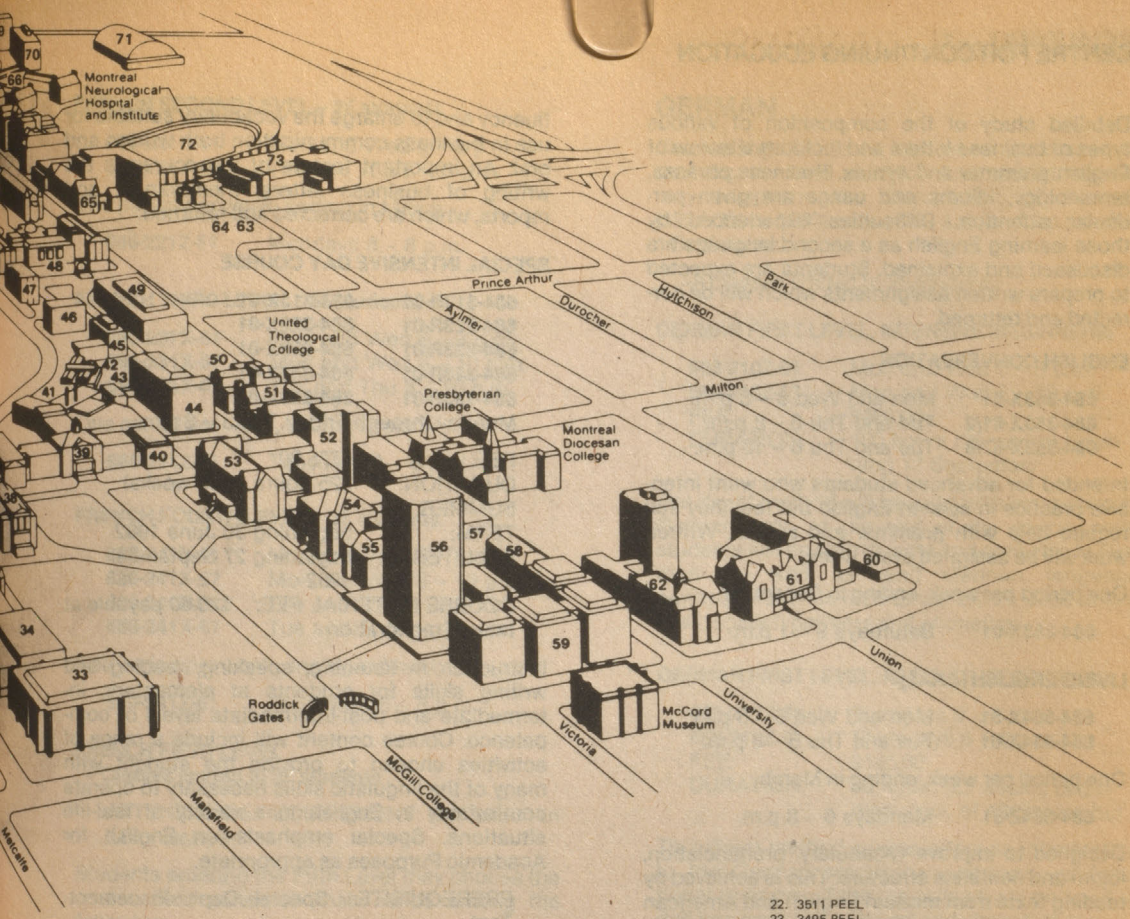

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3. MARTLET HOUSE
4. DAVIS HOUSE
5. HOSMER HOUSE
6. STEWART BIOLOGICAL SCIENCES BUILDING
7. McINTYRE MEDICAL SCIENCES BUILDING
8. CHANCELLOR DAY HALL
9. 3690 PEEL
10. 3674 PEEL
11. 3708 PEEL
12. CHARLES MEREDITH HOUSE
13. LADY MEREDITH HOUSE
14. PURVIS HALL
15. DUGGAN HOUSE
16. ALLAN MEMORIAL INSTITUTE
17. EDUCATION BUILDING
18. HUGESSEN HOUSE
19. DAVID THOMSON HOUSE
20. 3647 PEEL
21. POWELL STUDENT SERVICES BUILDING
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23. 3495 PEEL
24. 3491 PEEL
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26. 3475 PEEL
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28. PETERSON HALL
29. FACULTY CLUB
30. 3438 McTAVISH
31. 3434 McTAVISH
32. SAMUEL BRONFMAN BUILDING
33. McLENNAN LIBRARY BUILDING
34. REDPATH LIBRARY BUILDING
35. REDPATH HALL
36. MORRICE HALL
37. STEPHEN LEACOCK BUILDING
38. REDPATH MUSEUM
39. ARTS BUILDING & MOYSE HALL
40. DAWSON HALL
41. JAMES FERRIER BUILDING
42. PHYSICAL PLANT–GREENHOUSE
43. F. CYRIL JAMES BUILDING–ANNEX
44. F. CYRIL JAMES BUILDING
45. FOSTER RADIATION LABORATORY
46. EATON BUILDING
47. DONNER BUILDING
48. STRATHCONA ANATOMY & DENTISTRY BUILDING
49. ERNEST RUTHERFORD PHYSICS BUILDING
50. WILLIAM & HENRY BIRKS BUILDING
51. WILSON HALL
52. McCONNELL ENGINEERING BUILDING
53. MACDONALD ENGINEERING BUILDING
54. MACDONALD-HARRINGTON BUILDING
55. MACDONALD PHYSICS BUILDING
56. BURNSIDE HALL
57. FRANK DAWSON ADAMS BUILDING
58. PULP & PAPER INSTITUTE
59. OTTO MAASS CHEMISTRY BUILDING
60. GARFIELD WESTON POOL
61. STRATHCONA MUSIC BUILDING & POLLACK CONCERT HALL
62. ROYAL VICTORIA COLLEGE
63. 505 PINE WEST
64. 509 PINE WEST
65. PATHOLOGY BUILDING & MEAKINS-CHRISTIE LAB
66. DOUGLAS HALL
67. BISHOP MOUNTAIN HALL
68. GARDNER HALL
69. MOLSON HALL
70. McCONNELL HALL
71. McCONNELL WINTER STADIUM
72. MOLSON STADIUM
73. SIR ARTHUR CURRIE MEMORIAL GYMNASIUM

Detailed study of the composition of various types of business letters and includes a review of English grammar and syntax. Business phrases, terminology, idioms and usage are given particular attention. Difficulties experienced by those learning English as a second language are discussed and explained. Students are expected to prepare written assignments which will be corrected and returned.

ENGLISH CONVERSATION

684-353X-51 Mon and Wed 6 - 8 p.m.
684-353X-61/2 Tue and Thu 6 - 8 p.m.
684-353X-67/8 Tue and Thu 8 - 10 p.m.

Intended for advanced students who want intensive practice in spoken English but feel they still require help with grammar and syntax. Written work will be assigned every week.

One period per week, ending in December

684-353X-01 Saturdays 9 - 1 p.m.

LIVING ENGLISH (ORAL)

684-354X-51 Mon and Wed 6 - 8 p.m.
684-354X-61 Tue and Thu 6 - 8 p.m.

One period per week, ending in March

684-354Z-51 Mondays 6 - 8 p.m.

Designed to improve vocabulary, pronunciation, idiom and sentence structure. This is achieved by reading texts from modern English and American authors and also scenes from modern plays in order to familiarize students with modern spoken English. Discussing, reading aloud or acting out scenes, dialogues and short stories will provide the opportunity in class for active student participation.

ENGLISH - POST CERTIFICATE COURSES

ENGLISH ADVANCED COMPOSITION I

684-361X-61/2 Tue and Thu 6 - 8 p.m.
PREREQUISITE: Certificate of Proficiency or score of 90% in the Classification Test.

ENGLISH ADVANCED COMPOSITION II

684-363Y-61 offered in January 1983

Designed for those who wish to improve their written communication ability. Building on acquired basic composition skills, the course material and assignments will focus on matters of style and appropriateness of expression.

ENGLISH ADVANCED BUSINESS WRITING

684-362X-51 Mon and Wed 6 - 8 p.m.
PREREQUISITE: Certificate of Proficiency or score of 90% in the Classification Test

Offers training in how to express ideas effectively in business situations. The aim is to increase fluency and to enlarge the vocabulary suitable for use in business communication both written and oral. An important feature of the course is the writing of business letters, memoranda, and reports, which are corrected and returned.

SPECIAL INTENSIVE DAY COURSE

684-313R-01 **684-313X-01**
684-323R-01 **684-323X-01**
684-333R-01 **684-333X-01**
684-343R-01 **684-343X-01**
684-353R-01 **684-353X-01**
Monday through Friday. 9 a.m. - 3 p.m.

FEE: $775.00
DURATION: 225 hours (nine weeks)
SUMMER TERM: beginning 30 June 1982
FALL TERM: beginning 27 September 1982
COURSE MATERIAL FEE: $20.00 payable at time of registration

Instruction in listening, speaking, reading and writing skills for students at elementary, intermediate and post-intermediate levels of competence. Course content will include a range of activities chosen to provide the student with many of the linguistic skills necessary to operate comfortably in English in a variety of real-life situations. Special emphasis on English for Academic Purposes as appropriate.

PREREQUISITE: Special Dept. Placement-Test

• FRENCH

FEE: $140.00
DURATION: 45 hours (twice-a-week courses: 12 weeks) 45 hours (once-a-week courses: 23 weeks) beginning week of 13 September

WITH LABORATORY

FRENCH FIRST LEVEL - 20 students

686-210X-51 Mon and Wed 6 - 8 p.m.

FRENCH SECOND LEVEL - 25 students

686-220X-57 Mon and Wed 8 - 10 p.m.

FRENCH THIRD LEVEL - 25 students

686-230X-61 Tue and Thu 6 - 8 p.m.

WITHOUT LABORATORY

FRENCH FIRST LEVEL - 20 students

686-211X-51 Mon and Wed 6 - 8 p.m.
686-211X-61 Tue and Thu 6 - 8 p.m.
686-211X-67 Tue and Thu 8 - 10 p.m.

FRENCH SECOND LEVEL – 25 students

686-221X-51	Mon and Wed 6 – 8 p.m.
686-221X-61	Tue and Thu 6 – 8 p.m.

One period per week, ending in March

686-221Z-51	Mondays 6 – 8 p.m.

FRENCH THIRD LEVEL – 25 students

686-231X-51	Mon and Wed 6 – 8 p.m.
686-231X-57	Mon and Wed 8 – 10 p.m.
686-231X-67	Tue and Thu 8 – 10 p.m.

One period per week, ending in March

686-231Z-61	Tuesdays 6 – 8 p.m.

FRENCH FOURTH LEVEL – 25 students

686-241X-51	Mon and Wed 6 – 8 p.m.
686-241X-57	Mon and Wed 8 – 10 p.m.
686-241X-61	Tue and Thu 6 – 8 p.m.
686-241X-67	Tue and Thu 8 – 10 p.m.

One period per week, ending in March

686-241Z-81	Thursdays 6 – 8 p.m.

FRENCH FIFTH LEVEL
– Classes limited to 25 students

ATTENDANCE REQUIREMENT: Not less than 2/3 of lectures

Students entering the Fifth Level may choose the course best suited to their needs among the following:

FRENCH COMPOSITION

686-351X-51	Mon and Wed 6 – 8 p.m.
686-351X-67	Tue and Thu 8 – 10 p.m.

Consists of exercises in grammar, composition and stylistics. Homework will be assigned each week and discussed in class.

FRENCH BUSINESS WRITING

686-352X-57	Mon and Wed 8 – 10 p.m.

Offers a study of various types of business letters and a review of grammar and syntax. Business phrases, terminology, idioms and usage are given special attention. Homework will be assigned each week, corrected and returned.

FRENCH CONVERSATION

686-353X-57	Mon and Wed 8 – 10 p.m.
686-353X-61	Tue and Thu 6 – 8 p.m.

One period per week, ending in March

686-353Z-77	Wednesdays 8 – 10 p.m.

Conducted in the form of discussions, debates and short speeches on a variety of subjects. It includes a review of grammar and syntax.

GERMAN

Counselling: Students who need assistance in deciding the level at which they should register may telephone the Department of German (392-5091 or 5093) between 9 a.m. and 5 p.m. after 1 September.

All classes limited to 25 students

GERMAN FIRST LEVEL, INTENSIVE (BEGINNERS)

688-210Z-51	Mon and Wed 6 – 8 p.m.
688-210Z-57	Mon and Wed 8 – 10 p.m.
FEE:	$260.00
DURATION:	100 hours (25 weeks) beginning 13 September

The direct method will be used with instruction in German only. At the end of the course most students will be able to write and converse in German as well as read German language newspapers. Tape recordings will be used to drill basic speech patterns and phonetics.

* **GERMAN FIRST LEVEL, REGULAR (BEGINNERS)**

688-211Z-61	Tuesdays 6 – 8 p.m.
688-211Z-81	Thursdays 6 – 8 p.m.
FEE:	$145.00
DURATION:	50 hours (25 weeks) beginning week of 13 September

This direct method course offers an introduction to the German practical vocabulary and functional grammar. Tape recordings will be used to drill basic speech patterns and phonetics.

GERMAN SECOND LEVEL, REGULAR

688-221Z-71	Wednesdays 6 – 8 p.m.
FEE:	$145.00
DURATION:	50 hours (25 weeks) beginning 15 September

Designed to develop fluency and correctness in speaking, reading and writing the language. German texts and periodicals will be used to promote class discussion on current events.

GERMAN THIRD LEVEL

688-231X-61	Tue and Thu 6 – 8 p.m.
FEE:	$140.00
DURATION:	45 hours (12 weeks) beginning 14 September
PREREQUISITE:	100 hours of German or equivalent

Intended to help students attain a greater degree of aural comprehension and fluency in oral and written expression as well as syntax. Selected readings will illustrate aspects of the civilization and culture of German speaking countries.

GERMAN FOURTH LEVEL

688-241Y-61	Tue and Thu 6 – 8 p.m.

FEE: $140.00
DURATION: 45 hours (12 weeks) beginning 18 January
PREREQUISITE: 145 hours of German or equivalent
ATTENDANCE REQUIREMENT: Not less than 2/3 of lectures

Consists of conversation, composition, phonetics and some readings of literary texts as well as an outline of civilization, culture and folklore of German speaking countries.

Students who obtain 75% or more in the final examination will receive the Certificate of Proficiency.

(Not part of the Certificate Program)
ADVANCED GERMAN CONVERSATION

688-353Z-81 Thursdays 6 – 8 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks) beginning 16 September
PREREQUISITE: 200 hours of German or equivalent plus interview with a member of the German department prior to registration.

Designed to provide students who have completed fourth level German with the opportunity to practise the language through discussion of selected texts and topics of interest.

ITALIAN

Counselling: Students who need assistance in deciding the level at which they should register may telephone the Department of Italian (392-4567) between 9 a.m. and 5 p.m. after 1 September

All classes limited to 25 students

ITALIAN FIRST LEVEL, INTENSIVE

692-210Z-61 Tue and Thu 6 – 8 p.m.
FEE: $260.00
DURATION: 100 hours including 25 hours in the laboratory (25 weeks) beginning 14 September

Designed for beginners who wish to acquire a good working knowledge of the language in one year. The direct method will be used and instruction will be in Italian from the beginning. Conversation and class discussion will be encouraged.

The language laboratory will be used to improve pronunciation, develop aural comprehension and to drill students in basic speech patterns.

* **ITALIAN FIRST LEVEL, REGULAR**

692-211Z-61 Tuesdays 6 – 8 p.m.
692-211Z-81 Thursdays 6 – 8 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks beginning week of 13 September

A beginner's course using the direct method approach. Special emphasis will be placed on building a practical vocabulary for everyday use through conversation and questions on the readings. Written exercises and oral drills will acquaint students with basic language patterns and grammatical structures.

* **ITALIAN SECOND LEVEL, REGULAR**

692-221Z-71/2 Wednesdays 6 – 8 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks) beginning 15 September
PREREQUISITE: 50 hours of Italian or equivalent

Designed to develop fluency and correctness in speaking, reading and writing the language, Italian periodicals and texts, and visual aids will be used to promote class discussion on current events and also on life in modern Italy.

ITALIAN THIRD LEVEL, REGULAR

692-231Z-61 Tuesdays 6 – 8 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks) beginning 14 September
PREREQUISITE: 100 hours of Italian or equivalent

Conducted entirely in Italian and will include conversation, readings, grammar, composition and an outline of contemporary Italian civilization.

ITALIAN FOURTH LEVEL, REGULAR

692-241Z-51 Mondays 6 – 8 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks) beginning 13 September
PREREQUISITE: 150 hours of Italian or equivalent
ATTENDANCE REQUIREMENT: Not less than 2/3 of lectures

Emphasis placed on class discussion of readings, which will include Italian novels, short stories or plays as well as texts on aspects of Italian civilization. Grammar and syntax will be reviewed according to the specific needs of the students.

• **COMMERCIAL ITALIAN**

692-352Z

(Not part of the Certificate Program)
ADVANCED ITALIAN CONVERSATION

692-353Z-71 Wednesdays 6 – 8 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks) beginning 15 September
PREREQUISITE: 200 hours of Italian or equivalent plus interview with a member of the Italian Department prior to registration.

Designed to provide students who have completed Fourth level Italian with the opportunity to practise the language through discussion of selected texts and topics of interest.

RUSSIAN

Counselling: Students who need assistance in deciding the level at which they should register may telephone the Department of Russian and Slavic Studies (392-4610 or 4616) between 9 a.m. and 5 p.m. after 1 September

All classes limited to 25 students

RUSSIAN FIRST LEVEL, INTENSIVE

696-210Z-61 Tue and Thu 6 - 8 p.m.
FEE: $260.00
DURATION: 100 hours including 25 hours in the laboratory (25 weeks) beginning 14 September

This course is for beginners who desire a good working knowledge of Russian in one year. The direct method is used with instruction partially in Russian. Materials include excerpts from modern literature, newspapers, etc. Students will acquire a basic vocabulary for conversation and reading purposes.

* **RUSSIAN FIRST LEVEL, REGULAR**

696-211Z-51 Mondays 6 - 8 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks beginning 13 September

Covers the alphabet and basic grammar of Russian. It includes reading, oral practice, written exercises, and an introduction to modern Russian culture.

RUSSIAN SECOND LEVEL, REGULAR

696-221Z-71 Wednesdays 6 - 8 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks) begin ning 15 September
PREEQUISITE: 50 hours of Russian or equivalent

Consists of grammatical drills and oral exercises, reading and translation of selected texts by modern Soviet Russian authors.

RUSSIAN THIRD LEVEL, REGULAR

696-231Z-57 Mondays 8 - 10 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks) beginning 13 September
PREREQUISITE: 100 hours of Russian or equivalent

Intended to help students acquire a greater degree of aural comprehension and fluency in Russian while continuing the review of grammar.

RUSSIAN FOURTH LEVEL, REGULAR

696-241Z-61 Tuesdays 6 - 8 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks) beginning 14 September
PREREQUISITE: 150 hours of Russian or equivalent
ATTENDANCE REQUIREMENT: Not less than 2/3 of lectures

Conducted entirely in Russian with emphasis on conversation. Points of grammar and syntax will be explained as the need arises. Discussions will be based in part on readings in Russian civilization and folklore. Those who wish to apply for the Certificate of Proficiency are required to complete additional reading and written work.

SPANISH

Counselling: Students who need assistance in deciding the level at which they should register may telephone the Department of Hispanic Studies (392-4600 or 4601) between 9 a.m. and 5 p.m. after 1 September

All classes limited to 25 students

* **SPANISH FIRST LEVEL, REGULAR**

697-211X-51/2 Mon and Wed 6 - 8 p.m.
697-211X-61 Tue and Thur 6 - 8 p.m.
FEE: $140.00
DURATION: 45 hours (12 weeks) beginning week of 13 September

697-211Z-51 Mondays 6 - 8 p.m.
697-211Z-71 Wednesdays 6 - 8 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks) beginning week of 13 September

Frequent and systematic drill is used to develop rapid response to spoken Spanish and to enable the student to read quickly. Use of the language laboratory is an integral part of the course.

* **SPANISH SECOND LEVEL, REGULAR**

697-221Y-51 Mon and Wed 6 - 8 p.m.
FEE: $140.00
DURATION: 45 hours (12 weeks) beginning 17 January

697-221Z-51 Mondays 6 - 8 p.m.
697-221Z-71 Wednesdays 6 - 8 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks) beginning week of 13 September
PREREQUISITE: 45 hours of Spanish or equivalent

Conducted entirely in Spanish and its aims are to speed up fluency, to achieve correctness of pronunciation and to give a review of grammatical

structures. Oral and written exercises will be given. Readings will be taken from modern Spanish and Spanish-American literature.

SPANISH THIRD LEVEL, REGULAR

697-231Z-51/2 Mondays 6 – 8 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks) beginning 13 September
PREREQUISITE: 90 hours of Spanish or equivalent

Includes a review of grammar, phonetics, conversation, and cultural material, and will concentrate on readings in Spanish-American literature.

SPANISH FOURTH LEVEL, REGULAR

697-241Z-61 Tuesdays 6 – 8 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks) beginning 14 September
PREREQUISITE: 145 hours of Spanish or equivalent
ATTENDANCE REQUIREMENT: Not less than 2/3 of lectures

Similar to Third Level but will be devoted to readings in Spanish literature.

(Not part of the Certificate Program)
ADVANCED SPANISH CONVERSATION

697-353Z-71 Wednesdays 6 – 8 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks) beginning 15 September
PREREQUISITE: 200 hours of Spanish or equivalent plus interview with a member of the Spanish department prior to registration.

Designed to provide students who have completed Fourth level Spanish with the opportunity to practise the language through discussion of selected texts and topics of interest.

TRANSLATION

Regulations governing the program: see page 64 – All classes limited

EVALUATION: The breakdown of the final mark will be as follows:
40% homework
20% mid-term examination
40% final examination
(not applicable to Comp. Styl. I & II)

FIRST YEAR – BASIC PRINCIPLES AND PRACTICE OF TRANSLATION

FEE: $180.00
DURATION: 50 hours (25 weeks) beginning week of 13 September
698-311Z-51/2 Mondays 6 – 8 p.m.
698-311Z-61/2 Tuesdays 6 – 8 p.m.
698-311Z-71/2 Wednesdays 6 – 8 p.m.

Consists of one hour of French and one hour of English. It will be an introduction to the basic principles of translation through careful analysis of selected texts and practice work leading to improved skills in both French and English.

FIRST YEAR – COMPARATIVE STYLISTICS OF FRENCH AND ENGLISH I

FEE: $170.00
DURATION: 45 hours (22 weeks) beginning week of 13 September
698-211Z-61 Tuesdays 6 – 8 p.m.
698-211Z-81 Thursdays 6 – 8 p.m.

Provides linguistic and stylistic comparisons between English and French in terms of their relation to the practical study of Translation. Comparative analysis of the structures of the two languages will be used to outline the common problems of translation and to develop strategies for dealing with them.

The emphasis will be placed on problems of grammar and syntax.

Must either be taken in the Spring 1982 session or concurrently with Basic Principles and Practice of Translation.

In order to proceed to Second Year both First Year courses must have been successfully completed.

SECOND YEAR – GENERAL AND TECHNICAL TRANSLATION I

FEE: $180.00
DURATION: 50 hours (25 weeks) beginning week of 13 September
698-321Z-61/2 Tuesdays 6 – 8 p.m.
698-321Z-71/2 Wednesdays 6 – 8 p.m.

Consists of one hour of French and one hour of English. Besides practice in translating texts of a general nature, there will be practice in technical translation.

SECOND YEAR – COMPARATIVE STYLISTICS OF FRENCH AND ENGLISH II

FEE: $170.00
DURATION: 45 hours (22 weeks) beginning week of 13 September
698-221Z-51 Mondays 6 – 8 p.m.
698-221Z-67 Tuesdays 8 – 10 p.m.

Continues the work done in Comparative Stylistics of French and English I, with greater emphasis on problems of style.

May be taken concurrently with General and Technical Translation I or during the Spring session, Tuesdays and Thursdays, of the same year.

In order to proceed to Third Year both Second Year courses must have been successfully completed.

THIRD YEAR – GENERAL AND TECHNICAL TRANSLATION II

FEE: $180.00
DURATION: 50 hours (25 weeks) beginning week of 13 September
ATTENDANCE REQUIREMENT: Not less than 4/5 of all classes held during the year.

FRENCH SECTION

698-331Z-51 Mondays 6 – 8 p.m.
698-331Z-77 Wednesdays 8 – 10 p.m.
698-331Z-81 Thursdays 6 – 8 p.m.

ENGLISH SECTION

698-332Z-81 Thursdays 6 – 8 p.m.
698-332Z-87 Thursdays 8 – 10 p.m.

In this year the full course will be devoted to the language of the student's choice. Texts of a general nature will be used as well as technical texts.

DIPLOMA IN TRANSLATION

FOURTH YEAR-GENERAL AND LITERARY TRANSLATION

FEE: $180.00
DURATION: 50 hours (25 weeks) beginning week of 13 September
PREREQUISITE: Certificate of Proficiency in Translation
ATTENDANCE REQUIREMENT: Not less than 4/5 of lectures

FRENCH SECTION

698-341Z-61 Tuesdays 6 – 8 p.m.
698-341Z-67 Tuesdays 8 – 10 p.m.

ENGLISH SECTION

698-342Z-71 Wednesdays 6 – 8 p.m.

The material covered will be prose of literary quality ranging from the critical essay to the descriptive or psychological novel.

NON-CERTIFICATE COURSES

ARABIC

ARABIC FIRST LEVEL, INTENSIVE

681-210Z-61 Tue and Thu 6 – 8 p.m.
FEE: $260.00
DURATION: 100 hours including 25 hours in the laboratory (25 weeks) beginning 14 September

Designed to cover First and Second Levels in one course. Planned for beginners, provides basic instruction in Arabic grammar and the rudiments of reading and writing in classical and modern Arabic, through the audio-visual method.

ARABIC THIRD LEVEL, INTENSIVE

681-230Z-51 Mon and Wed 6 – 8 p.m.
FEE: $260.00
DURATION: 100 hours including 25 hours in the laboratory (25 weeks) beginning 13 September
PREREQUISITE: First Level course or permission of the instructor.

Designed to cover Third and Fourth Levels in one course. Offers the student who has already acquired a basic knowledge of Arabic the opportunity of practising the reading and writing of classical and modern Arabic and of acquiring a higher degree of fluency and correctness in the language.

ARMENIAN

ARMENIAN (Eastern) FIRST LEVEL

683-211Z-51 Mondays 6 – 8 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks) beginning 13 September

Offers an introduction to the Eastern Armenian vocabulary, functional grammar and phraseology. At the end of the course most students will be able to converse, read, and write in Eastern Armenian.

ARMENIAN (Western) FIRST LEVEL

689-211Z-57 Mondays 8 – 10 p.m.
FEE: $145.00
DURATION: 50 hours (25 weeks) beginning 13 September

Offers an introduction to the Western Armenian vocabulary, functional grammar and phraseology. At the end of this course most students will be able to converse, read, and write in Western Armenian.

CHINESE

CHINESE FIRST LEVEL, INTENSIVE

682-210Z-51 Mon and Wed 6 – 8 p.m.
FEE: $260.00
DURATION: 100 hours including 25 hours in the laboratory (25 weeks) beginning 13 September

Designed to cover First and Second Levels in one course. Designed for students to learn to communicate in different situations. At the end of the year students should be able to express themselves and carry on discussions in daily life situations with a certain degree of fluency. They will also begin to learn some of the basics of

reading and writing. Audio-visual aids will be utilized as well as other modern language teaching techniques.

CHINESE SECOND LEVEL, INTENSIVE

682-220Z-51	Mon and Wed 6 – 8 p.m.
FEE:	$260.00
DURATION:	100 hours including 25 hours in laboratory (25 weeks) beginning 13 September
PREREQUISITE:	A minimum of 100 hours of Chinese

Designed to cover Third and Fourth Levels in one course. Offers the student the opportunity to continue the practice of spoken and written Chinese and to attain a greater degree of fluency and correctness in the language.

• COMPARATIVE STYLISTICS OF ENGLISH & FRENCH

FUNCTIONAL FRENCH FOR PROFESSIONALS

* **INTERMEDIATE FUNCTIONAL FRENCH FOR PROFESSIONALS**

Mon and Wed 6 – 8 p.m.

686-031X-51	Accounting
686-032X-51	Health Care (nurses, physiotherapists, etc.)
686-033X-51	Housing & Environment (engineers, architects, etc.)
686-034X-51	Human Relations (social workers, psychologists, etc.)
686-035X-51	Medicine
FEE:	$185.00
DURATION:	40 hours (10 weeks) beginning 13 September

* **ADVANCED FUNCTIONAL FRENCH FOR PROFESSIONALS**

Tue and Thu 6 – 8 p.m.

686-041X-61	Accounting
686-042X-61	Health Care (nurses, physiotherapists, etc.)
686-043X-61	Housing & Environment (engineers, architects, etc.)
686-044X-61	Human Relations (social workers, psychologists, etc.)
686-045X-61	Medicine
FEE:	$185.00
DURATION:	40 hours (10 weeks) beginning 14 September

Designed to help professionals and aspiring professionals, for whom French is a second language, to acquire the skills and confidence necessary to function effectively in a francophone milieu.

PREREQUISITE: McGill Placement Test

GREEK (MODERN)

– Classes limited to 25 students

GREEK FIRST LEVEL

690-211Z-51	Mondays 6 – 8 p.m.
690-211Z-71	Wednesdays 6 – 8 p.m.
FEE:	$135.00
DURATION:	50 hours including 12 hours in the laboratory (25 weeks) beginning week of 14 September

Planned for beginners. It will begin with the spoken language and will aim at the acquisition of automatic skills. It will gradually proceed to the written language and will aim at developing the ability to understand and to write a simple composition.

GREEK SECOND LEVEL

690-221Z-81	Thursdays 6 – 8 p.m.
FEE:	$145.00
DURATION:	50 hours (25 weeks) beginning 16 September

Intended for students who have a knowledge of the spoken language and of the basic rules of Greek grammar. Students' correct and active use of the language will be encouraged through the written preparation and oral presentation of projects. Students will be introduced to the cultural content of the language and to some modern Greek literature. The class will be conducted in Greek.

HEBREW

INTRODUCTORY HEBREW (6 credits)*

135-221Z-61	Tue and Thur 6 – 8 p.m.
FEE:	$114.00
DURATION:	100 hours (25 weeks) beginning 28 September

An introductory course designed to help the student develop skill in speaking, reading, and writing Hebrew.

HUNGARIAN

HUNGARIAN FIRST LEVEL, (BEGINNERS)

691-211Z-71	Wednesdays 6 – 8 p.m.
FEE:	$145.00
DURATION:	50 hours (25 weeks) beginning 15 September

This course is designed to teach essential communication in Hungarian through pronunciation

exercises, basic grammar, speaking and reading. Homework will be assigned.

HUNGARIAN SECOND LEVEL

691-221Z-71

JAPANESE

All classes limited to 25 students

JAPANESE FIRST LEVEL, INTENSIVE

694-210Z-61	Tue and Thu 6 - 8 p.m.
FEE:	$260.00
DURATION:	100 hours including 25 hours in the laboratory (25 weeks) beginning 14 September

Designed to cover First and Second Levels in one course. Offers basic training in Japanese grammar, conversation, reading and writing with special emphasis on pronunciation and aural comprehension.

JAPANESE THIRD LEVEL

694-231Z-51	Mondays 6 - 8 p.m.
FEE:	$145.00
DURATION:	50 hours (25 weeks) beginning 13 September
PREREQUISITE:	100 hours of Japanese or equivalent

Offers an opportunity to continue the practice of spoken Japanese. It will also emphasize reading and writing (Kana and Kanji) thus enabling the students to attain a higher degree of fluency and correctness in the language.

JAPANESE FOURTH LEVEL

694-241Z-71	Wednesdays 6 - 8 p.m.
FEE:	$145.00
DURATION:	50 hours (25 weeks) beginning 15 September
PREREQUISITE:	150 hours of Japanese or equivalent

Offers an opportunity to continue the practice of spoken Japanese. It will also emphasize reading and writing (Kana and Kanji) thus enabling the students to attain a higher degree of fluency and correctness in the language through the working of translation Japanese to English and English to Japanese.

POLISH

INTRODUCTION TO POLISH STUDIES (6 credits)*

141-255Z-61	Tue and Thur 6 - 8 p.m.
FEE:	$114.00
DURATION:	100 hours (25 weeks) beginning 14 September

An introduction to the study of Polish civilization, with emphasis on Polish as a Western Slavic language.

NOTE: In 1982-83 this course will consist of a study of the Polish language for beginners.

PORTUGUESE

Counselling: Students who need additional information concerning this course may telephone the Department of Hispanic Studies (392-4600 or 4601) between 9 a.m. and 5 p.m. after 1 September. All classes limited to 25 students.

PORTUGUESE LANGUAGE: INTERMEDIATE (6 credits)*

144-204Z-61	Tue and Thu 6 - 8 p.m.
FEE:	$114.00
DURATION:	100 hours (25 weeks) beginning 14 September
PREREQUISITE:	100 hours of Portuguese or equivalent

Designed to provide students with a review of grammar. Consists of practice in speaking and writing composition. Reading of selected Portuguese and Brazilian literature.

YIDDISH

INTRODUCTORY YIDDISH (6 credits)*

135-281Z-61	Tue and Thur 6 - 8 p.m.
FEE:	$114.00
DURATION:	100 hours (25 weeks) beginning 28 September

An introduction course designed to help the student develop skill in speaking, reading, and writing Yiddish.

*The credit courses have the fee of $19.00 per credit. CREDITS WILL ONLY BE GRANTED TO THOSE STUDENTS REGISTERED IN A DEGREE PROGRAM.

8 LIBERAL ARTS

Mrs. J. Hollander
Co-ordinator

392-6704

8.1 INTRODUCTION

Most of the courses in this Department are non-credit courses. There are, however, some credit courses available. These are open to all, except where special prerequisites are indicated, but credits will be given only to students already registered in a degree program.

IF A COURSE TEMPTS YOU, DON'T WAIT TILL THE LAST MINUTE TO REGISTER. SOME COURSES FILL UP IMMEDIATELY - OTHERS ARE CANCELLED IF INSUFFICIENT INTEREST IS SHOWN - IN ADVANCE.

An evaluation process will be conducted in *all* courses but non-credit students are not obliged to avail themselves of this opportunity.

A wide variety of topics is included:

NON-CREDIT COURSES:
- ARCHAEOLOGY
- CANADIAN STUDIES
- FINE AND APPLIED ARTS
- HUMAN BEHAVIOUR
- MEDICAL SECRETARIES

CREDIT COURSES:
- CLASSICS
- ENVIRONMENTAL STUDIES
- FOOD AND CONSUMER SCIENCES
- HISTORY
- LIBRARY SCIENCE (restricted to librarians and archivists)
- RELIGIOUS STUDIES

8.2 TIMETABLE

A listing of instructors, textbooks, buildings and room numbers for all courses will be distributed at time of registration. Please ask for a copy.

8.3 LIBRARIES

Library privileges are available to all students registrered in Liberal Arts courses at:

McLennan Library
Redpath Undergraduate Library

8.4 COURSE DESCRIPTIONS

*** Asterisk indicates section will be repeated in January.**

• This symbol indicates course will not be offered 1982-83.

CREDIT COURSES

CLASSICS

Each course carries 3 credits

FEE: $57.00
DURATION: 13 lectures plus modular instructional periods unless otherwise indicated

(1) ANCIENT GREEK HISTORY

114-201X-71 Wednesday 6 - 8 p.m.
beginning 15 September

A survey of Ancient Greek History from the origins to Roman conquest of eastern Mediterranean. Political development of Greek city states in archaic period, Persian Wars, rise of Athens and its fall in Peloponnesian War, expansion of Greek civilization by Alexander.
Not open to students who have completed 114-202D in previous years.

(2) INTRODUCTION TO GREEK MYTHOLOGY

114-203X-51 Mondays 6 - 8 p.m.
beginning 13 September

The origins, formation and transmission of Greek myth. A study of major myths and themes of myth with reference to the literary sources and to Greek art. The cultural values and religious attitudes which the myths reflect.

(3) ANCIENT HISTORY (ROMAN)

114-241Y-61 Tuesdays 6 - 8 p.m.
beginning 11 January

Survey of Roman history from its origins to reign of Constantine. Development of Roman constitution through the kings, republic and its collapse, the principate, its transformation into dominate of Diocletian and Constantine and the expansion of Rome in Italy and the Mediterranean. (Not open to students who have completed 114-202D in previous years.)

(4) GREEK DRAMA AND THEATRE

114-300Y-51 Mondays 6 - 8 p.m.
beginning 10 January

The Greek dramatists, both tragic and comic, in the light of their plays, with special emphasis on the theatrical techniques of the authors and the means of production in the Greek theatre.

(5) MODERN GREEK HISTORY FROM 1204 to 1821

114-403X-61 Tuesdays and Thursdays
6 - 8 p.m.
20 lectures (40 hours)
beginning 14 September

The problem of the beginnings of modern Greece and its relation to the ancient and medieval worlds. The Greek world after 1204: its gradual transformation after the Frankish rule and during the Turkish domination; the historical foundations of modern Greek society in the period of 1453 - 1669; the neo-Hellenestic "Renaissance" of the 18th century and the progressive development of the national idea.

(6) MODERN GREEK HISTORY FROM 1821 to 1980

114-404Y-61 Tuesdays and Thursdays 6 - 8 p.m.
20 lectures (40 hours)
beginning 6 January

The Greek war of independence and the Great Powers 1821 - 1827; Greek independence and Capodistrias. The years of absolute monarchy and constitutional monarchy. Political evolution and the national question. Economic development from circa 1875 to the 'victory of the bourgeoisie' (1909). The Balkan Wars and development of a modern state after World War I.

HISTORY

Each course carries 3 credits.

FEE: $57.00
DURATION: 26 lectures (39 hours)

(7) CANADA TO 1867

101-202X-61 Tuesdays and Thursdays 6 - 7:30 p.m.
beginning 14 September

A survey of the development of Canada, from the Columbian explorations until the Confederation period. Social, economic and political history will be examined in a general way. (Not open to students who have taken History 101-202D).

(8) CANADA SINCE 1867

101-203Y-61 Tuesdays and Thursdays 6 - 7:30 p.m.
beginning 11 January

A survey of the development of Canada from Confederation to the present day. Social, economic and political history will be examined in a general way. (Not open to students who have taken 101-202D).

FOOD AND CONSUMER SCIENCES

Each course carries 3 credits
FEE: $57.00
DURATION: 13 lectures (39 hours)

(9) CONSUMER IN THE MARKET PLACE

381-332X-51 Mondays 6:30 - 9:30 p.m.
beginning 13 September

A study of the role of the consumer in the economy, factors which influence consumer behaviour, problems faced by the consumer and legislation and agencies concerned with consumer protection.

(10) PERSONAL AND FAMILY FINANCE

381-333Y-61 Tuesdays 6:30 - 9:30 p.m.
beginning 11 January

An examination of the management of family resources. Included: use of credit, purchasing durable goods, insurance, taxes, savings, investment and estate planning.

THE FOLLOWING COURSES ARE ALSO AVAILABLE:

(11) TOPICS IN HUMAN NUTRITION

382-401X-81 Thursdays 6:30 - 9:30 p.m.
beginning 16 September

Nutrients essential for adolescents; ways of meeting these needs. Nutritional implications of fast food service and a study of the dietary factors involved in the prevention of obesity, dental caries, cardiovascular disease.

(12) TOPICS IN FOOD AND NUTRITION

382-402Y-81 Thursdays 6:30 - 9:30 p.m.
beginning 13 January

Nutritional implications of food processing, food additives, early feeding practices. World food problems, food and drug regulations, nutrient labelling and development of nutrition policies and goals.
Prerequisite: 382-401X or other introductory course in nutrition.
For details see Education Department in this Announcement. Registration for these 2 courses on their specified dates, 3700 McTavish Street.

LIBRARY SCIENCE

(restricted to librarians and archivists)

FEE: $57.00
DURATION: 12 lectures (36 hours)

Courses to be offered during 1982-83 Fall and Winter sessions not yet determined. For information, please write or telephone Graduate School of Library Science, McGill University 3459 McTavish Street, Montreal H3A 1Y1 392-5847 or 392-5930.

ENVIRONMENTAL STUDIES

- *not offered 1982-83*

• **(13) ENVIRONMENTAL LAW FOR CITIZENS (3 credits)**

495-472X-51
FEE: $57.00
DURATION: 13 lectures (26 hours) plus individual work projects

The basic legal aspects of environmental issues. Environmental problems will be discussed from the points of view of federal and provincial jurisdictions, civil and criminal remedies, case histories, citizen action, court system, legal standing to sue and environmental impact assessment.

RELIGIOUS STUDIES

Each course carries 3 credits
FEE: $57.00
DURATION: 15 lectures (30 hours)

(14) WORLD RELIGIONS – I

260-254X-71 Wednesdays 6 – 8 p.m.
beginning 15 September

Introduction to Hinduism and Buddhism. A consideration of origins, scriptures, philosophies of each. Sources and methods for the teaching of religions, also for general interest.

(15) WORLD RELIGIONS – II

260-255Y-71 Wednesdays 6 – 8 p.m.
beginning 12 January

Introduction to Islam with concentration on its origin, beliefs, practices. Sources and methods for the teaching of religion, also for general interest. Focus on modern situation.

(16) TOPICS IN CHURCH HISTORY: Conduct and Morality in Historical Perspective

260-328Y-61 Tuesdays 6 – 8 p.m.
beginning 11 January

An examination of problems in human interaction through selected writing by leading Christian thinkers. Among the works to be studied are The Didache, the letters of Abelard and Heloise, The Enchiridion by Erasmus, How to Educate Noble Youths by H. Zwingli etc.

(17) TOPICS IN RELIGION AND THE ARTS: The Religious Dimensions of Modern Painting, 1850 to the Present

260-347X-61 Tuesdays 6 – 8 p.m.
beginning 14 September

Modern religious consciousness expressed in modern art; rediscovery of archaic religious phenomena (fertility, fetishism, nature-worship), use of formal devices in painting to express religious feeling; creation of new iconography in modern painting; the art movement as religious sect. Analysis of paintings from Symbolist, Dadaist, Surrealist, Abstract, Expressionist, contemporary movements.

NON-CREDIT COURSES

ARCHAEOLOGY

(18) BIBLICAL ARCHAEOLOGY – I

670-211X-61 Tuesdays 6 – 8 p.m.
FEE: $90.00
DURATION: 13 lectures (26 hours)
beginning 14 September

A survey of the civilizations of Palestine from the Natufians of 7000B.B. until the time of Christ. A tying together of the history of early Israel in the light of new discoveries in archaeology with new understandings of the ancient literature. Well illustrated by slides.

(19) BIBLICAL ARCHAEOLOGY – II

670-232Y-61 Tuesdays 6 – 8 p.m.
FEE: $90.00
DURATION: 13 lectures (26 hours)
beginning 11 January

Sequel to Biblical Archaeology – I. It will include archaeology pertaining to the Judeo-Christian tradition from 539 B.C. to the Christian era. Ancient texts and new archaeological discoveries will be studied.

(20) ANCIENT EGYPT

670-221X-71 Wednesdays 6 – 8 p.m.
FEE: $90.00
DURATION: 13 lectures (26 hours)
beginning 15 September

Ancient Egyptian civilization seen through its history, religion, beliefs, customs from prehistoric stages to Greco-Roman period. Among subjects to be covered: flows and ebbs of the Empire, lives of Pharaohs and their people, deities and legends, funeral rites including mummification, discovery of a tomb. Well illustrated.

(21) ART AND ARCHITECTURE IN ANCIENT EGYPT

670-244Y-71 Wednesdays 6 – 8 p.m.
FEE: $90.00
DURATION: 13 lectures (26 hours)
beginning 12 January

The awakening, development and death of design, painting, sculpture and monuments from the pre-historic stages to the Greco-Roman period. Temples, Tombs and their contents, Dwellings, Pyramids, Sphinxes, Obelisks, Basreliefs and Statuary. One lecture will be given in the Ancient Egyptian collection of the Redpath Museum. Abundantly illustrated.

CANADIAN STUDIES

(7) CANADA TO 1867
(8) CANADA SINCE 1867

(22) CANADIAN ART HISTORY

674-100X-61	Tuesdays 6 - 8 p.m.
FEE:	$90.00
DURATION:	13 lectures (26 hours) beginning 14 September

An environmental approach to the study of Canadian painting, sculpture, architecture. Special emphasis on the influences of geography, history and settlement patterns. A study of the Canadian work of art with comparisons and contrasts to American and European works of the same period.

(23) CONTEMPORARY CANADIAN ART

674-102Y-61	Tuesdays 6 - 8 p.m.
FEE:	$90.00
DURATION:	13 lectures (26 hours) beginning 11 January

The art scene from the Group of Seven to the present time, including discussion of painting, sculpture, graphic arts, some comparisons with the art of other countries important in today's movements and "schools" of art. An attempt to bring the contemporary scene to a more personal level and come to grips with problems found in 20th century art.

CAREER PREPARATION

(24) MEDICAL SECRETARIES

640-102Z-61	Tuesdays 6 - 8 p.m.
FEE:	$185.00
DURATION:	25 lectures (50 hours) beginning 28 September
PREREQUISITE:	High School Graduation, Secretarial training

First hour: basic anatomy and physiology by a qualified medical practicioner. Second hour - medical office procedure with emphasis on medical terminology. Considerable homework is required.

FINE AND APPLIED ARTS

(25) ART OF LISTENING - PART I

670-106X-81	Thursdays 6 - 8 p.m.
FEE:	$90.00
DURATION:	13 lectures (26 hours) beginning 16 September

A non-technical course for the listener designed to expand his perception and appreciation of music from the Baroque to the Twentieth Century. Works to be played by the Montreal Symphony Orchestra will be emphasized. Illustrated with tape recordings, slides, instruments. Class Limited. An 8 - 10 p.m. section will be opened ONLY if the earlier one is filled and there is sufficient demand.

(26) ART OF LISTENING - PART II

670-107Y-81	Thursdays 6 - 8 p.m.
FEE:	$90.00
DURATION:	13 lectures (26 hours) beginning 27 January

A more in depth examination of musical, non-musical forces behind masterworks of composers from Bach to Stravinsky, along with a closer non-technical inquiry into harmony, textural perspective, foreground-background relationships and modulation. Program music, symphonic poem, rhapsody, art song along with works to be performed in Montreal's coming music season. Class Limited.

(27) ENJOYING OPERA

670-223X-71	Wednesdays 6 - 8 p.m.
FEE:	$90.00
DURATION:	13 lectures (26 hours) beginning 15 September

Understanding and appreciating major operatic styles from the origins of opera to the twentieth century. A wide variety of selections will be heard and discussed, with special emphasis given to the works of Mozart, Verdi, Wagner and Strauss.

(28) OPERA WORLD (Five Famous Operas)

670-233Y-71	Wednesdays 6 - 8 p.m.
FEE:	$90.00
DURATION:	13 lectures (26 hours) beginning 12 January

A non-technical course in opera appreciation for the layman, for a deeper understanding of opera through in-depth analysis of major operas. Operas will be selected by class from: Der Rosenkavalier, Otello, Turandot, Marriage of Figaro, Boris Goudonov, Wozzeck, Die Walkure and operas performed live in Montreal.

(29) BASIC INTERIOR DESIGN - PART I

671-103X-71	Wednesdays 6 - 8 p.m.
FEE:	$100.00
DURATION:	13 lectures (26 hours) beginning 15 September

Students will learn to plan an entire project including the establishment of a critical path, the planning of a house and each individual area of the house. There will be practical exercises in order to learn how to compile a portfolio.

(30) BASIC INTERIOR DESIGN - PART II

671-104Y-I71	Wednesdays 6 - 8 p.m.
FEE:	$100.00

DURATION: 13 lectures (26 hours) beginning 12 January

The subject of the second half of this course will be: Materials, Colours, Lighting and Furniture. The general method of presentation for Part I and Part II will be audio-visual and the student will be asked to work on some practical exercises.

(31) RESIDENTIAL INTERIOR DESIGN – PART I

671-105X-61 Tuesdays 6 – 8 p.m.
FEE: $100.00
DURATION: 13 lectures (26 hours) beginning 14 September

Outline plans and perspective sketches; design – its meaning and application in the home; unity and drama; similarity and contrast; furniture arrangement; architectural effects. Weekly outline of a historical period or style. Class Limited.

(32) RESIDENTIAL INTERIOR DESIGN – PART II

671-106Y-61 Tuesdays 6 – 8 p.m.
FEE: $100.00
DURATION: 13 lectures (26 hours) beginning 11 January

Structured so that a student may start with Part II. Colour, colour mixing and colour schemes; light and lighting; mirrors; ornaments and pictures; budgeting; operating a design business. Continuation of historical periods and styles series. Class Limited.

(33) CREATIVE WRITING

* **671-200X-81** Thursdays 6 – 8 p.m.
FEE: $90.00
DURATION: 13 classes (26 hours) beginning 16 September

To aid students with the type of writing they choose and to give an overview of various forms: short story, novel, play, poetry etc., techniques, style, setting, character, description, dialogue, atmosphere, plot etc. Class Limited.

(34) DRAWING

671-101X-51 Mondays 7 – 10 p.m.
* **671-101X-61** Tuesdays 7 – 10 p.m.
FEE: $110.00
DURATION: 13 classes (39 hours) beginning week of 13 September

Drawing for both beginners and intermediates, exploring the fundamentals of graphic expression using various media: charcoal, pencil, pen and ink, and conté crayon. Students will provide their own materials. Class Limited.

(35) PAINTING

* **671-102X-71** Wednesdays 7 – 10 p.m.
FEE: $110.00
DURATION: 13 classes (39 hours) beginning 15 September

This course will emphasize individual development in colour theory and pictorial expression. Students will paint from still life, life, imagination. Students will provide their own materials. Class Limited.

(36) WATERCOLOUR PAINTING

671-101X-02 Tuesdays and Thursdays 10:00 a.m. – 1:00 p.m.
FEE: $110.00
DURATION: 13 classes (39 hours) beginning 9 September

671-107X-81 Thursdays 6:30 – 9:30 p.m.
FEE: $110.00
DURATION: 13 classes (39 hours) beginning 16 September

671-107U-02 Tuesdays and Thursdays 10:00 a.m. – 1:00 p.m.
FEE: $110.00
DURATION: 13 classes (39 hours) beginning 17 May

For beginners, intermediates or advanced students. An introduction to the medium and its potential for luminosity, colour, form, description, pattern by drawing from nature and imagination. Students will provide thejr own materials. Class Limited.

(37) MIXED MEDIA ON PAPER

671-109Y-81 Thursdays 6:30 – 9:30 p.m.
FEE: $110.00
DURATION: 13 classes (39 hours) beginning 13 January

Using pencil, watercolour, pastel, gouache, charcoal and more, specific assignments based on life study will focus on texture and space made possible through the manipulation of varied media. Students will provide their own material. Class Limited.

(38) EFFECTIVE TELEVISION COMMUNICATION

671-204X-51 Mondays 6 – 9 p.m.
FEE: $275.00
DURATION: 13 classes (39 hours) beginning 13 September

Introduction to the theory, equipment and techniques of television production. Students will direct T.V. productions and operate cameras, lights, microphones and switcher. Practical experience in a colour production studio will constitute 60% of class time. Class Limited.

(39) TELEVISION PRODUCTION

671-208Y-52 Mondays 6 – 9 p.m.
FEE: $225.00
DURATION: 10 workshops (30 hours) beginning 24 January

Techniques used in studio production and post-production editing. Students will work as produc-

tion teams in preparing, shooting and editing television productions.
PREREQUISITE: 671-204X or permission of instructor.

(40) HISTORY OF MODERN IRELAND

670-300X-71	Wednesdays 6 - 8 p.m.
FEE:	$90.00
DURATION:	13 lectures (26 hours) beginning 15 September

The rise of Irish nationalism in mid 19th century, Land War of Parnell years, rise of cultural Nationalism at end of 19th and beginning of 20th centuries, revolutionof 1916-22, Treaty partitioning the country, aftermath of Civil War. The Great Famine, Mass Emigration, Overthrow of the Landed Classes, Gaelic Revival, Impact of Religion on Social and Political Life.

SEE:
(7) CANADA TO 1867
(8) CANADA SINCE 1867
(1) ANCIENT GREEK HISTORY
(3) ANCIENT HISTORY (ROMAN)
(5) MODERN GREEK HISTORY 1204-1821
(6) MODERN GREEK HISTORY 1821 - 1980

HUMAN BEHAVIOUR

(41) PSYCHOLOGICAL DEVELOPMENT II

672-202X-61	Tuesdays 6 - 8 p.m.
FEE:	$90.00
DURATION:	13 lectures (26 hours) beginning 14 September

Processes of psychological development from birth to maturity in the areas of intelligence, perception and language.

(42) INTRODUCTION TO PSYCHOLOGY

672-200Y-I61	Tuesdays 6 - 8 p.m.
FEE:	$90.00
DURATION:	13 lectures (26 hours) beginning 11 January

An introduction to basic methods and terminology. Biological issues, learning, motivation, perceptual development. Human functioning in terms of emotion, problem solving, personality, psychological disorders.

(43) INTERPERSONAL RELATIONS

***672-233X-71**	Wednesdays 6 - 8 p.m.
FEE:	$75.00
DURATION:	10 lecture/discussions (20 hours) beginning 22 September

Focus on human relations, stressing understanding of interpersonal experiences. Topics include motivation, reaction to conflict, perception, problem solving, group processes and pressures, conformity, independence and leadership.

(44) CAREGIVING

672-905X-81	Thursdays 3 - 5 p.m.
FEE:	$30.00
DURATION:	6 seminars (12 hours) beginning 23 September

For persons in their later years who care for aging relatives or spouses. Discussions on facts and fictions about aging, health, the meaning of dependence and independence, controversies about intergenerational relations. Emphasis willbe on the sharing of information and experiences of the participants for purpose of mutual help. (Day and time may be negotiated if necessary.) Course fee is adjusted to include Senior Citizens. No further reduction will be applied.

(45) THE BRAIN AND BEHAVIOUR

672-204X-76	Wednesdays 8 - 10 p.m.
FEE:	$75.00
DURATION:	10 lectures (20 hours) beginning 22 September

Brain function, behaviour, relation between them. Nature of communication within nervous system including: physiological basis of such motivations as hunger and thirst; sexual and parental motivations; information theory; working of the visual system; fictional differences between the two halves of the brain; communication between animals; physiology of memory.

(46) THE BRAIN AND MIND

672-205Y-76	Wednesdays 8 - 10 p.m.
FEE:	$75.00
DURATION:	10 lectures (20 hours) beginning 26 January

Topics include Sensory Systems, Memory, Language, Dreaming, Attention. A follow up course to The Brain and Behaviour but may be taken separately.

(47) UNDERSTANDING AND COPING WITH ILLNESS

672-285X-61	Tuesdays 6:30 - 8 p.m.
FEE:	$25.00
DURATION:	11 lectures (16½ hours) beginning 21 September

Health related problems for the public at large. Some of the topics included: What is cancer - can it be prevented? Causes, hereditary aspects, long term sequelae of diabetes; the allergic family; heart disease and risk factors; use and abuse of alcohol and drugs; from the pill to menopause;

the failing kidney, dialysis and transplantation; physical fitness – is jogging good for you? Coping with aging. Sexually transmitted diseases. Biologic effects of smoking on heart and lungs. Adjusted course fee, no further reduction.

SHORT TERM COURSES

Will be announced when they become available. To be added to the mailing list for Short Term Courses, send your name and address to: Liberal Arts Department, Centre for Continuing Education, 3461 McTavish St., Montreal H3A 1Y1.

SEE:

(43) INTERPERSONAL RELATIONS
(44) CAREGIVING
(45) THE BRAIN AND BEHAVIOUR
(46) THE BRAIN AND MIND
(47) UNDERSTANDING AND COPING WITH ILLNESS

SHORT TERM COURSES

These are announced when they become available. To be added to the mailing list for Short Term Courses, send your name and address to: Liberal Arts Department, Centre for Continuing Education, 3461 McTavish Street, Montreal, P.Que. H3A 1Y1. Be sure to state "Short Term Courses".

JAPAN 1983

Are you interested in a trip to Japan preceded by a mini-course in the history and culture of this fascinating land? *If a minimum of 15 participants* commit themselves to the trip, the Liberal Arts Department will make the arrangements. The course would start in January but there will be an introductory meet-the-instructor-guide sometime in October. Anyone interested should phone 392-4905 to leave his/her name, address and day time telephone number.

8.6 COURSE LIST BY EVENING & TIME

MONDAY

6:00 – 8:00

(2) Introduction to Greek Mythology
(4) Greek Drama and Theatre

6:00 – 9:00

(38) Effective Television Communication
(39) Television Production

6:30 – 9:30

(9) Consumer in the Marketplace

7:00 – 10:00

(34) Drawing

TUESDAY

10:00 a.m. – 1:00 p.m.

(36) Watercolour Painting

6:00 – 8:00

(3) Ancient History (Roman)
(5) Modern Greek History: 1204 – 1821
(6) Modern Greek History: 1821 – 1980
(16) Conduct and Morality in Historical Perspective
(17) Religious Dimensions in Modern Painting – 1850 to Present
(18) Biblical Archaeology – I
(19) Biblical Archaeology – II
(22) Canadian Art History
(23) Contemporary Canadian Art
(24) Medical Secretaries
(31) Residential Interior Design – I
(32) Residential Interior Design – II
(41) Psychological Development
(42) Introduction to Psychology

6:00 – 7:30

(7) Canada to 1867
(8) Canada since 1867

6:30 – 8:00

(46) Understanding and Coping with Illness

6:30 – 9:30

(10) Personal and Family Finance

7:00 – 10:00

*(34) Drawing

WEDNESDAY

6:00 – 8:00

(1) Ancient Greek History
(14) World Religions – I
(15) World Religions – II
(20) Ancient Egypt
(21) Art and Architecture in Ancient Egypt
(27) Enjoying Opera
(28) Opera World
(29) Basic Interior Design – I
(30) Basic Interior Design – II
(40) History of Modern Ireland
*(43) Interpersonal Relations

7:00 – 10:00

*(35) Painting

8:00 - 10:00

(44) The Brain and Behaviour
(45) The Brain and Mind

THURSDAY

3:00 - 5:00

(44) Caregiving

6:00 - 8:00

(25) Art of Listening - I
(26) Art of Listening - II
*(33) Creative Writing

6:30 - 9:30

(11) Topics in Human Nutrition
(12) Topics in Food and Nutrition
(36) Watercolour Painting
(37) Mixed Media on Paper

9 MANAGEMENT CERTIFICATE

Professor Edward Burnett
Director

Peter Salomon
Faculty Lecturer

Claudette Lapierre
Administrative Assistant

Marisa Terrenzio
Coordinator of Student Services

Carol Depatie
Student Records

Angele Debrossian
Admissions

392-6704

9.1 INTRODUCTION

The Management Certificate Department offers programs of study for which a university degree is not required for admission. A Certificate Program comprises a series of courses designed to provide a suitable combination of breadth and depth of knowledge in a specific area of study. The programs offered are normally the equivalent of one year of full time university study and require the completion of 10 courses.

Students who have complied with the admission procedures may fulfil the requirements of McGill University Certificates, the requirements of various professional associations as well as the Bachelor of Commerce degree in the Faculty of Management by studying during the fall, winter spring and summer. Students are urged to keep their academic and professional goals in mind as they choose their courses.

Those not wishing to be admitted to a certificate program may register as a special student in courses suiting their own needs provided they have satisfactorily completed the prerequisites.

A special student takes regular credit courses but is not recognized as working towards a Certificate. The number of courses a special student may take is limited. The Centre for continuing Education has no obligation to recognize credits earned by special students towards completion of a Certificate Program.

The staff of the Certificate Department will answer questions on certificate admission procedures, assist you with your course choice plans and provide you with information on professional or undergraduate requirements.

Careful reading of the following should ensure that a student can fulfil his or her own needs as well as fulfil the McGill requirements and those of the cooperating associations General Academic Requirements for.

9.2 CERTIFICATE PROGRAMS

9.2.1 ADMISSION REQUIREMENTS

To be admitted to a certificate program:

i) Students must hold a CEGEP diploma (DEC or equivalent)

or ii) Students 21 years of age and over who do not have the normal academic background for admission may be admitted as mature students.

iii) Students under 21 years of age and 18 or over who do not have a CEGEP diploma may be accepted into a qualifying program to be determined by the Department. Formal admission to the certificate program will normally follow upon satisfactory completion of the qualifying program.

Students below 18 years of age without a CEGEP diploma (DEC) will not be admitted to a certificate program.

9.2.2 ADMISSION PROCEDURES

Students wishing to follow a Certificate Program must obtain an "Application for Admission" and return it with:

i) proof of age

or ii) unofficial transcript

Arrangements should be made to forward an official transcript confirming CEGEP completion for students not applying as a mature student.

Application deadlines are:

Spring	- February 15
Fall	- June 15
Winter	- October 15

Please note that students who do not register within one year of date of acceptance will be required to reapply.

9.2.3 APPLICATION FEE

The application fee is $15.00 (non-refundable). This fee includes application for evaluation of transcripts of previous education for students requesting advanced standing in a program.

9.2.4 RESIDENCY REQUIREMENT AND ADVANCED STANDING

a) Students transferring to McGill:

Advanced standing of up to 30% of the courses in any one certificate program may be awarded for successfully completed equivalent study.

b) Students transferring within McGill:

i) Students who withdraw from a certificate program may transfer credit to another certificate with no limit to the number of credits granted provided the courses are identical and all other requirements of the new certificate are met.

ii) Students who withdraw from a degree or diploma program but who have successfully completed courses appropriate to the content, standards, and other requirements of a particular certificate may be awarded credit towards that certificate program up to and including the entire certificate.

c) Students taking two programs concurrently:

i) Students may apply for admission to and register in more than one certificate program at a time. Where program course requirements overlap, credit may be granted up to a maximum of 3 courses (9 credits). Students may be granted exemption for overlapping courses in excess of 9 credits but must choose substitute courses with the approval of the Department. Where a certificate program requires more than 10 courses (30 credits) the extra courses, if

appropriate, may be counted, without limitation, towards completion of another certificate program.

ii) Students may be concurrently registered in a certificate and degree or diploma program. Courses, approved for the degree or diploma program by the Associate Dean, which also meet the requirements of the certificate, may also be counted by the Centre toward completion of the certificate. This form of double counting is subject to limitation.

iii) Students who are in degree or diploma programs may apply for admission to a certificate program and be awarded the certificate provided they complete a minimum of 4 courses (12 credits) in the certificate program after admission to that program.

d) Students admitted to degree or diploma programs after completing a certificate program:

Students who apply for admission to a degree or diploma program after having completed a certificate program may be granted advanced standing at the discretion of the Associate Dean of the Faculty in which the degree or diploma is offered.

9.2.5 GRADING SYSTEM

Classification of marks:

A	85 - 100%	Satisfactory Pass
A−	80 - 84%	
B+	75 - 79%	
B	70 - 74%	
B−	65 - 69%	
C+	60 - 64%	
C	55 - 59%	
D	50 - 54%	CONDITIONAL PASS
F	0 - 49%	FAILURE

Certain courses may be approved for Pass/Fail (P/F) grading.

A grade of C or better is required for all but one of the courses in the student's certificate program. One grade of D will be tolerated among the student's elective courses, provided that the course is not a prerequisite to further courses in the program. Students are permitted to repeat any course only once.

9.2.6 TIME LIMITS

For a single certificate requiring ten courses (30 credits) the program must be completed within four years of initial registration. For co-requisite certificates, the two certificate programs (20 courses, 60 credits) must be completed within eight years of initial registration. Where a certificate program requires more than 10 courses, the time limit will be adjusted accordingly. Students exceeding the time limits must withdraw from the program but may reapply and under special circumstances be admitted to a revised program of study which meets current requirements.

9.2.7 LANGUAGE ADMISSION REQUIREMENT

ENGLISH REQUIREMENT: Applicants in the Management Certificate Programs who are not Canadian citizens and whose native language is not English must submit evidence of their facility in English before they may be considered for admission. acceptable evidence would be the successful completion of one of the following:

i) a University program in English
OR ii) the G.C.E. Ordinary & Advanced Level Examinations in English Literature or Composition.
OR iii) The University of Michigan English Language Test (Level V)
OR iv) The Test of English as a Foreign Language (TOEFL) (Score 550)
OR v) The McGill Placement Test (Level V)

Arrangements for the McGill Placement Test may be made through the Languages Department in the Centre for Continuing Education. Telephone: 392-8301.

9.3 DEPARTMENTAL INFORMATION

The following headings are arranged in alphabetical order by topic. See also General Information.

9.3.1 ADVANCED STANDING

Advanced standing may be granted to students who provide evidence of equivalent study done independently or in other programs at McGill University or elsewhere. Evaluation of education for particular professional associations is also available.

Students wishing to apply for advanced standing should contact the office at least six weeks before registration.

Evaluation requests received less than 14 days before registration may be delayed resulting in a late registration for which the normal penalty will be applied.

A fee of $15.00 (non-refundable) is payable for evaluation of non-McGill transcripts for students not applying to a McGill Certificate Program.

9.3.2 ADVANCED STUDENTS

For prerequisite purposes a student is considered an Advanced Student when he has completed 24 credits in his program sequence. Due to the wide range of courses available consideration will be given to the individual background of the student.

9.3.3 BOOKSTORE

See General Information section 2.12.1.

9.3.4 CONVOCATION

See General Information section 2.6.

9.3.5 CO-REQUISITE

This refers to academic requirements that may be completed before, during or after a program or course. For example, the Certificate in Management is a co-requisite of the Certificate in Accounting and students may complete all the work for a Certificate in Accounting without necessarily having completed the Certificate in Management. However, the official recognition from the University will not be made until requirements of both the Certificates are met.

9.3.6 COURSE APPROVAL

In order to ensure proper sequencing of courses, all students must obtain course approval before each term. Information on course approvals will be sent to students before each term commences.

9.3.7 COURSE EVALUATIONS

In order to keep in touch with your needs the Centre seeks continuous feedback on its courses. The results of the course evaluations are used for course development, student information and administrative action. To this end students are invited to evaluate their courses each term.

9.3.8 COURSE FEES

Course fees are $57.00 per course ($19.00 per credit) unless otherwise indicated.

9.3.9 COURSES AVAILABLE IN THE FRENCH LANGUAGE

Some courses will be offered in the French language for the Spring, Summer, Fall and Winter sessions. Please see section 2.4 for a listing of courses.

COURS OFFERTS EN FRANÇAIS

Beaucoup de cours seront offerts en français pendant les sessions de printemps, d'été, d'automne et d'hiver. Veuillez voir la section 2.4 pour la liste des cours.

9.3.10 COURSES AVAILABLE IN THE DAY

Students may register in a day course if they have the prerequisites and numbers permit. Acceptance is made at the discretion of the appropriate faculty. Please see general information section 2.4.

9.3.11 COURSES NOT OFFERED IN THE 1982/83 ACADEMIC YEAR

The Centre is ready to offer advanced level and specialized courses to meet student needs. Due to the small numbers of students involved, special arrangements may have to be made in order to make sure that a particular course takes place. Students are invited to show their interest in these courses by calling the Centre at 392-6704. If you are interested in a particular course, your name will be put on a waiting list. If there are enough students, and with sufficient notice, we will make every attempt to offer the course. The successful offering of these courses is seen as a cooperative activity between the student and the Centre. Compulsory courses will only be postponed if the numbers are too small to form a class.

▲ Courses marked with this symbol will not be offered in the evening in 1982/83. They are however part of the regular day program.

• Courses marked with this symbol will not be offered in the evening or day in 1982/83. For any courses not offered students may request that they be offered.

9.3.12 DIAGNOSTIC TEST

For those students entering a Certificate Program requiring the course College Algebra and Functions, there will be a diagnostic test on the following dates:

Monday 9 August

Monday 8 November

Monday 4 April 1982

9.3.13 EXAMINATIONS

An examination is held at the end of each course unless specifically excepted. Final examinations for fall courses will be held from:
Wednesday, 8 December to Thursday, 23 December.

Final examinations for winter courses will be held from:

Monday, 11 April to Saturday, 23 April.

An examination schedule is mailed to students about half way through the course.

STUDENTS SHOULD NOT MAKE OTHER COMMITMENTS FOR THIS PERIOD UNTIL AN OFFICIAL EXAM DATE IS PUBLISHED BY THIS DEPARTMENT

Examinations must be conducted in accordance with university regulations. Students who do not sit required examination(s) must normally repeat the course. Commitments accepted after registration do not normally excuse students from this requirement.

Students will receive written confirmation of their final examination or course results after each term. As the results for each course become available, they will be posted on the notice board at the Centre. Results CANNOT be obtained by telephone.

9.3.14 FRENCH LANGUAGE REQUIREMENTS

See General Information section 2.10.

9.3.15 GRADING SYSTEM

See General Information section2.9.3.

9.3.16 LIBRARIES

See General Information section2.12.3.

9.3.17 PRE TERM COUNSELLING

Members of the department's staff will be available to meet with groups of students to explain and discuss the requirements for the various programs and courses offered.

You will have an opportunity to raise questions and have assistance in suiting your chosen program of studies to your needs. Students are urged to take this opportunity since more time can be devoted to questions well ahead of the start of term. PRE TERM COUNSELLING WILL BE AVAILABLE ON THE FOLLOWING DATES:

FALL	- Tuesday, 25 May - Thursday, 10 June
WINTER	- Tuesday, 28 September - Wednesday, 6 October
SUMMER	- Tuesday, 8 February

9.3.18 PREREQUISITES

Admission to certain courses is restricted to students who have reached a certain level of knowledge by having completed other required work. The prerequisite course(s) or conditions are specified in the course description. Students must observe these prerequisites. If you fail to meet the prerequisite requirement, you may be denied permission to continue in the course. Students unsure of their status with regard to a prerequisite must enquire at the Centre.

9.3.19 REGISTRATION

Registration is on a first come, first served basis and students should be aware that the number of registrations accepted will be limited at the option of the Centre. For this reason early registration is encouraged. Please see General Information section 2.4 for dates.

NB. Priority will be given to those students officially admitted to programs.

Graduate and undergraduate students taking evening courses for credit are reminded that they must register both with their Faculty and the Centre for Continuing Education.

EFFECTIVE AUGUST 1982, DEPARTMENTAL OFFICES WILL BE CLOSED BETWEEN 9 a.m. and 1 p.m. DURING THE REGULAR REGISTRATION PERIODS.

9.3.20 REREADS

See General Information section 2.9.5.

9.3.21 SUMMER PROGRAM

A limited selection of courses is available during the summer. The official schedule will only be available in early March. Please enquire with this Department for further details.

9.3.22 SUPPLEMENTAL EXAMINATIONS

In certain courses supplemental examinations may be written by those students who have obtained 45% or more as a final mark. Where supplemental privileges are offered in a course, the examination will count for 100% of the course grade. The original mark will be reported on the student's record as well as the supplemental mark with the suffix S. Candidates who do not pass the supplemental examination will be required to repeat the course.

Students wishing to apply for a supplemental may do so in writing or in person at the Centre at least three weeks prior to the examination period. There is a charge of $20.00 (non-refundable) for each supplemental (payable to McGill University.)

Students must write their supplemental at the next examination period where the appropriate examination is offered or forfeit their supplemental privilege.

Students not writing at the assigned time will not be allowed further supplemental privileges.

N.B. There are no supplemental examinations for students registered in day courses.

9.3.23 TIMETABLE

FALL COURSES BEGIN THE WEEK OF 6 SEPTEMBER 1982
WINTER COURSES BEGIN THE WEEK OF 10 JANUARY 1983

Courses run for 13 weeks (39 hours) from 6:00 to 9:00 p.m. on week nights, and most courses are repeated in the winter session. The above is the case unless otherwise stated in the course description.

A TIMETABLE of instructors, textbooks, buildings and room numbers for all courses will be available before each registration, Fall, Winter, Spring and Summer. The timetable will contain information on any course or program changes that have come about since the printing of this announcement.

Students may only register for courses in the registration period immediately prior to the term

in which they are held. Please see General Information section 2.4 for dates.

See page 131 for a course list by subject and by evening and time.

9.4 CERTIFICATE PROGRAMS

Certificate in Accounting
Certificate in Banking Administration
Certificate in Business Communications
Certificate in Health and Social Services Management
Certificate in Management
Certificate in Management Information Systems
Certificate in Management (Insurance Brokerage)
Certificate in Management (Retail)
Certificate in Marketing
Certificate in Personnel
Certificate in Real Estate Analysis
Certificate in Real Estate Appraisal
Certificate in Transportation

9.5 UNDERGRADUATE PROGRAM

Bachelor of Commerce for part-time students in the Faculty of Management.

9.6 COOPERATIVE PROGRAMS

This department is involved in cooperative education activities with individual firms, professions and industry groups. Such organizations are invited to discuss their educational needs with the department. Many organizations give professional and career acceptance to the McGill and other cooperative educational activities as well as offering their own external diplomas and certificates. The following organizations are interested in students as potential members. See page 112 to 129 for full descriptions. Details of the cooperative program are available at the Centre as well as information on other professional associations.

Administrative Management Society
Appraisal Institute of Canada
Association des professionnels en ressources humaines du Québec
Association for Systems Management
Association of Professional Placement Agencies and Consultants
Canadian Association of Physical Distribution Management
Canadian Credit Institute
Canadian Institute of Management
Canadian Institute of Traffic and Transportation
Canadian Public Relations Society (Québec)
La Corporation Professionnelle des Comptables Généraux Licenciés du Québec (C.G.A.)
La Corporation Professionnelle des Administrateurs Agréés du Québec (C.Adm.)
Corporation Professionnelle des Évaluateurs Agréés du Québec (C.App.)
La Corporation Professionnelle des Comptables en Administration Industrielle du Québec (R.I.A.)
Institute of Canadian Bankers
Institute of Chartered Secretaries and Administrators
Institute of Internal Auditors
Insurance Brokers' Association of the Province of Québec
Insurance Institute of Québec
International Association of Business Communicators
Le Ministère des Affaires municipales du Québec
Project Management Institute (Montreal Chapter)
Québec Risk and Insurance Management Association
Real Estate Institute of Canada (FRI division)
Real Estate Institute of Canada (IREM division)
Trust Companies Institute

IT IS THE RESPONSIBILITY OF EACH STUDENT TO READ, UNDERSTAND AND ABIDE BY THE RULES AND PROCEDURES PRINTED HERE OR IN SUBSEQUENT NOTICES.

9.7 McGILL CERTIFICATE PROGRAMS

TO HELP YOU LOCATE THE COURSE DESCRIPTION, THE NUMBER IN BRACKETS BESIDE A COURSE TITLE REFERS TO THE NUMERICAL LISTING OF COURSE DESCRIPTIONS COMMENCING ON PAGE 112.

9.7.1 CERTIFICATE IN ACCOUNTING

OBJECTIVES:

To provide the academic training necessary for performing the accounting function. The Certificate in Accounting, in conjunction with the Certificate in Management fulfil the educational requirements of **La Corporation Professionnelle des comptables généraux licenciés du Québec (C.G.A.) and La Corporation Professionnelle des comptables en administration industrielle du Québec (R.I.A.)** and with the appropriate options prepare students to write the entrance examinations of the particular Corporations.

CO-REQUISITE – Certificate in Management

PROGRAM:

7 Compulsory Courses:			*Credits*
	(3)	Financial Accounting I	3
	(4)	Financial Accounting II	3
	(6)	Financial Accounting III	3
	(7)	Management Accounting I	3
	(8)	Management Accounting II	3
	(10)	Introduction to Auditing	3
	(13)	Taxation I	3
3 Courses from:			
	□(5)	Accounting Theory	3
	○(9)	Management Accounting III	3
	□○*(11)	Operational Auditing	3
	□(12)	External Auditing	3
	□(14)	Taxation II	3
	○(46)	Computer Based Information Systems	3
	(29)	Independent Studies in Management (Accounting)	3

□=C.G.A. OPTION
○=R.I.A. OPTION

9.7.2 CERTIFICATE IN BANKING ADMINISTRATION

OBJECTIVES:

To provide a broad introduction to administration in the banking setting.
Completion of this Certificate with the appropriate options satisfies the requirements for the Fellowship of the Institute of Canadian Bankers.

PREREQUISITE:			*Credits*
	*(30)	Principles of Management or equivalent	3

PROGRAM:

7 Compulsory Courses:			
	(1)	Introduction to Financial Accounting	3
	(75)	Introduction to Organizational Behaviour	3
	(64)	Marketing Management I	3
	(20)	Macro Economics	3
	(21)	Micro Economics	3
	(3)	Financial Accounting I	3
	(54)	Organizational Policy (This is the final course in the Certificate)	3

3 courses not all from the same group. The following groups are those designated by the Institute of Canadian Bankers.

MANAGEMENT OF FINANCIAL RESOURCES

(2)	Introduction to Management Accounting	3
(13)	Taxation I	3
(14)	Taxation II	3
(45)	Management Information Systems	3
(25)	Finance I	3
(26)	Managerial Finance	3
(28)	Capital Markets and Institutions	3
(39)	International Financial Management	3

*Pending Senate Approval.

MANAGEMENT OF HUMAN RESOURCES

(74)	Social Psychology	3
(76)	Group Dynamics and Interpersonal Relations	3
(79)	Personnel Administration	3
(80)	Compensation	3
(34)	Introduction to Industrial Relations	3
(35)	Collective Bargaining	3

ECONOMICS

(24)	Managerial Economics	3

GENERAL MANAGEMENT

(40)	Business Law I	3
(41)	Business Law II	3
(38)	Introduction to International Business	3
*(15)	Law and Banking Practice	3
*(16)	Banking Management	3

MARKETING

(68)	Marketing Research	3
(69)	Consumer Behaviour	3
(70)	Advertising Management	3
(66)	Marketing Management II	3
(71)	Sales Management	3
(72)	Industrial Marketing	3
(73)	Retail Management	3

QUANTITATIVE METHODS

(60)	Introductory Management Statistics	3
(61)	Statistical Methods in Management	3
(46)	Computer Based Information Systems	3
(63)	Production Management	3

9.7.3 CERTIFICATE IN BUSINESS COMMUNICATIONS

This certificate program is currently under review. Further information can be obtained by calling 392-6704.

9.7.4 CERTIFICATE IN HEALTH & SOCIAL SERVICES MANAGEMENT

OBJECTIVES:

The Certificate is designed to provide an integrated base of management knowledge for those who have an interest in the organization, functioning and management of departments in hospitals (general, for long-term care, etc.), reception centres for the youth and elderly, local community centres and other health and social establishments. It will focus on the development of skills in the day to day management of the provision of services in terms of both efficiency and human criteria.

		Credits
PREREQUISITE:	*(57) College Algebra and Functions	3

PROGRAM

8 Compulsory Courses:

(79)	Personnel Administration	3
	or	
(34)	Introduction to Industrial Relations	3
(31)	Health Care Organization	3
(1)	Introduction to Financial Accounting	3
(75)	Introduction to Organizational Behaviour	3
(60)	Introductory Management Statistics	3

*Pending Senate Approval.

*(84)	Evaluation of Health and Social Services Organizations	3
*(44)	Legal Aspects of Health Care	3
*(33)	Departmental Management in Health and Social Services	3

2 Courses from:

(76)	Group Dynamics and Interpersonal Relations	3
(78)	Creativity, Innovation and Management	3
(81)	Cases and Issues in Personnel	3
(17)	Communications Skill in Management	3
(45)	Management Information Systems	3
(32)	Hospital Organization and Management	3

9.7.5 CERTIFICATE IN MANAGEMENT

OBJECTIVES:

The Certificate prepares students for positions in general management and sets the stage for further management education. It presents a broad survey of underlying disciplines, and an introduction to the functional areas in management.

PREREQUISITES:

		Credits
(–)	English Composition (see page xx)	
*(57)	College Algebra and Functions	3

PROGRAM:

4 Compulsory Courses:

(1)	Introduction to Financial Accounting	3
(75)	Introduction to Organizational Behaviour	3
(60)	Introductory Management Statistics	3
(21)	Micro Economics	3

6 Courses from:

(54)	Organizational Policy	3
(79)	Personnel Administration	3
(45)	Management Information Systems	3
(25)	Finance I	3
(64)	Marketing Management I	3
†(63)	Production Management	3
†(62)	Operations Research	3
(40)	Business Law I	3
(41)	Business Law II	3
(20)	Macro Economics	3

† **Course 63 cannot be taken for credit if the student has taken course 62 and vice versa.**

9.7.6 CERTIFICATE IN MANAGEMENT INFORMATION SYSTEMS

OBJECTIVES:

To provide students with a technical and conceptual foundation in the design, development and administration of computer-based information systems for control and management of the organization.

A student completing this program will qualify for the Certificate of the Montreal Chapter of the Association for Systems Management.

PROGRAM:

			Credits
7 Compulsory Courses:	(1)	Introduction to Financial Accounting	3
	(45)	Management Information Systems	3

*Pending Senate Approval.

(46)	Computer Based Information Systems	3
(49)	Information Systems Design	3
(50)	Information Systems Administration	3
(53)	Control and Verification of Computer Systems	3
(48)	Business Programming Development	3

3 Courses from:

(2)	Introduction to Management Accounting	3
(47)	Systems Analysis and Modelling	3
(51)	Advanced Topics - Computer Systems Applications	3
(52)	Minicomputers, Microprocessors and their Applications	3
(29)	Independent Studies in Management (Computers)	3

9.7.7 CERTIFICATE IN MANAGEMENT (Insurance Brokerage)

This certificate program is currently under review. Further information can be obtained by calling 392-6704.

9.7.8 CERTIFICATE IN MANAGEMENT (Retail)

This certificate program is currently under review. Further information can be obtained by calling 392-6704.

9.7.9 CERTIFICATE IN MARKETING

OBJECTIVES:

To introduce students to theories and concepts of marketing, and to provide an opportunity to apply these in practical situations. It is intended that the student who completes the program will be prepared for a career in a major area in marketing and be able to understand and use modern marketing literature.

PREREQUISITE:

		Credits
*(57)	College Algebra and Functions	3

PROGRAM:

6 Compulsory Courses:

(1)	Introduction to Financial Accounting	3
(74)	Social Psychology	3
(64)	Marketing Management I (Must be taken before any other Marketing Course)	3
(68)	Marketing Research	3
(60)	Introductory Management Statistics	3
(67)	Marketing Planning (Must be taken as the final course in the Certificate)	3

4 Courses from:

(65)	Physical Distribution	3
(66)	Marketing Management II	3
(69)	Consumer Behaviour	3
(70)	Advertising Management	3
(71)	Sales Management	3
(72)	Industrial Marketing	3
(73)	Retail Management	3

*Pending Senate Approval.

9.7.10 CERTIFICATE IN PERSONNEL (Subject to Senate Approval)

OBJECTIVES:

The certificate provides an introduction to the underlying disciplines and basic practices of personnel administration. In addition, the certificate presents an overview of the specialized functions and some of the current and future issues in the area of personnel.

The program is addressed to practicing personnel administrators, those interested in orienting their career towards personnel management and to line and staff managers concerned about personnel practices.

PROGRAM:

The certificate comprises three phases for a total of 16 courses (48 credits). These are:

1. PREPARATION - Eight mandatory courses (24 credits) which review the disciplines upon which personnel practice is based.
2. SPECIALIZATION - Six mandatory courses (18 credits) which review the major aspects of the personnel function. The eight mandatory preparation courses must be completed before entering this phase of the program.
3. ELECTIVES - Two courses (6 credits) in the student's particular areas of interest.

PREPARATION

8 compulsory courses

		Credits
*(57)	College Algebra and Functions	3
(17)	Communications Skill in Management	3
*(30)	Principles of Management	3
(60)	Introductory Management Statistics	3
(74)	Social Psychology	3
(75)	Introduction to Organizational Behaviour	3
(45)	Management Information Systems	3
(79)	Personnel Administration	3

SPECIALIZATION

6 compulsory courses

*(82)	Employment	3
*(83)	Human Resource Training and Development	3
(80)	Compensation	3
(34)	Introduction to Industrial Relations	3
(77)	Strategies of Organizational Development	3
(81)	Cases and Issues in Personnel	3

ELECTIVES

2 courses from:

(18)	Principles of Helping Relationships	3
	or	
(91)	Industrial Social Work	3
(85)	Psychological Tests and Measurement	3
	or	
(37)	Human Resources in Industrial Society	3
(78)	Creativity, Innovation and Management	3
	or	
(76)	Group Dynamics and Interpersonal Relations	3
(1)	Introduction to Financial Accounting	3
(56)	Business in Society I	3
(36)	Labour Law	3
(19)	Practicum in Interviewing Skills	3
(35)	Collective Bargaining	3

Students are required to complete 16 courses (48 credits) to be granted the Certificate in Personnel. Students are not required to complete another certificate as co-requisite but will have the option of completing another

*Pending Senate Approval.

certificate and will be allowed advanced standing towards a second provided they complete 20 courses (60 credits). It is anticipated that most students will complete the Certificate in Management along with the Personnel Certificate. They will normally have completed 4 courses (12 credits) which may count toward, and will require 6 further courses (18 credits) for the Certificate in Management, as follows:

REQUIRED:

One course (3 credits) as follows:

(1)	Introduction to Financial Accounting	3

ELECTIVES:

Five courses 15 credits from:

(54)	Organizational Policy	3
(25)	Finance I	3
(64)	Marketing Management I	3
†(63)	Production Management	3
†(62)	Operations Research	3
(40)	Business Law I	3
(41)	Business Law II	3

† The course 63 cannot be taken for credit if the student has taken course 62, and vice versa.

9.7.11 CERTIFICATE IN REAL ESTATE APPRAISAL

This certificate program is currently under review. Further information can be obtained by calling 392-6704.

9.7.12 CERTIFICATE IN REAL ESTATE ANALYSIS

This certificate program is currently under review. Further information can be obtained by calling 392-6704.

9.7.13 CERTIFICATE IN TRANSPORTATION

OBJECTIVES:

To provide an academic basis for management positions in the transportation industry. Completion of the Certificate program will be recognized by the Canadian Institute of Traffic and Transportation as qualifying the candidate for membership in the Institute provided Distribution I and II of the CITT have been completed.

CO-REQUISITE - Certificate in Management

RECOMMENDED BUT NOT REQUIRED PRIOR TO ENTRY ARE THE CITT DISTRIBUTION I and II COURSES.

PROGRAM:

6 Compulsory courses:

		Credits
(65)	Physical Distribution	3
(61)	Statistical Methods in Management	3
(62)	Operations Research	3
(43)	Transport Law and Regulations	3
(22)	Transportation Economics	3
(92)	Transport. Policy	3

4 courses from Group A and Group B below. At least one option must be taken from Group A.

GROUP A	*(93)	Air Transport Management	3
	*(94)	Road Transport Management	3
	*(95)	Marine Transport Management	3
	*(96)	Rail Transport Management	3

* Pending Senate Approval.

GROUP B

(2)	Introduction to Management Accounting	
(74)	Social Psychology	3
(76)	Group Dynamics and Interpersonal Relations	3
(66)	Marketing Management II	3
(68)	Marketing Research	3
(55)	Seminar in Organizational Strategy	3
(38)	Introduction to International Business	3
(17)	Communications Skill in Management	3
(24)	Managerial Economics	3

9.8 BACHELOR OF COMMERCE FOR PART-TIME STUDENTS

The B.Com. program for part-time students in the Faculty of Management has been designed to be of assistance to those students who, for various reasons, cannot attend the university during the daytime. The evening courses are offered during the Fall, Winter, Spring and Summer.

In order to be accepted for the Fall 1983 term, students must apply to the Admissions Office by 1 March. For acceptance for the Winter 1983 term, students must apply by 1 November. Applications for admission as well as information on admission requirements can be obtained from the Admissions Office, McGill University, F Cyril James Building, 845 Sherbrooke St. West, Montreal, Québec H3A 2T5 (Telepone: 392-5300).

Students entering University with a DEC follow a 90 credit program. Students who enter the Faculty on a mature student basis, having completed high school but not having successfully completed CEGEP, but are 23 years of age or over, enter a program requiring completion of 102 credits, the extra 12 credits being electives.

Information concerning the Faculty regulations and procedures may be obtained from the Faculty of Management, Bachelor of Commerce announcement.

All students will be advised and have their programs approved by the Faculty of Management. The courses will only be part of a degree program if you have been officially accepted. Correspondence and enquires should be addressed to: Office of the Associate Dean, B.Com. Program, Faculty of Management, Samuel Bronfman Building, 1001 Sherbrooke Street West, Montreal, Québec H3A 1G5 (Telephone: 392-5854)

The courses listed below offered by the Centre for Continuing Education are accepted with the credit shown by the Faculty of Management. **All students accepted into the B.Com. for part-time students must obtain a course approval form from the Senior Program Adviser in the Faculty of Management and present it when registering with the Centre for Continuing Education.**

A. Primary Core Courses – 45 credits required by all B.Com. students

		Credits
(1)	Introduction to Financial Accounting	3
(74)	Social Psychology	3
(75)	Introduction to Organizational Behaviour	3
(54)	Organizational Policy	3
(45)	Management Information Systems	3
(25)	Finance I	3
(64)	Marketing Management I	3
(58)	Survey of Basic Mathematics I	3
(59)	Survey of Basic Mathematics II	3
(60)	Introductory Management Statistics	3
(61)	Statistical Methods in Management	3
(62)	Operations Research	3
(20)	Macro Economics	3
(21)	Micro Economics	3
(24)	Managerial Economics	3
(17)	Communications Skill in Management	3

† Of these only 3 credits will count towards Primary Core, the other 3 credits being applied to Secondary Core or electives. If the student has previously completed Calculus I and Calculus II, Survey of Basic Mathematics I and II must be replaced by electives.

B. Secondary Core Courses – 12 credits required by students completing only one concentration (see C. below)

Students will choose 12 credits from the list below:

		Credits
(2)	Introduction to Management Accounting	3
(46)	Computer Based Information Systems	3
(26)	Managerial Finance	3
(66)	Marketing Management II	3
(63)	Production Management	3
(38)	Introduction to International Business	3
(40)	Business Law I	3
(41)	Business Law II	3
(34)	Introduction to Industrial Relations	3

C. Concentration – 18 credits required for the first concentration, 15 credits required for subsequent concentrations. Of the twelve concentration's offered through the Faculty of Management, only four are available in the part-time program – Accounting, Marketing, Organizational Behaviour and Personnel. Should a student wish to complete joint or triple concentrations, Secondary Core Management Information Systems is eliminated. The courses listed below are those which are normally accepted by the Faculty of Management to fulfil the concentration and elective requirements of the B.Com. Questions pertaining to the appropriate selection of courses should be directed to the Senior Program Adviser, Mrs. Helen Van Eyk.

(1) *ACCOUNTING CONCENTRATION*

Credits

Category A: 9 credits required with a minimum "C" grade.

(3)	Financial Accounting I	3
(4)	Financial Accounting II	3
(7)	Management Accounting I	3

Category B: 3 credits required either

(5)	Accounting Theory	3
	or	
(9)	Management Accounting III	3

Category C: 6 credits required

(6)	Financial Accounting III	3
(8)	Management Accounting II	3
(10)	Introduction to Auditing	3
(13)	Taxation I	3
(46)	Computer Based Information Systems	3
(50)	Information Systems Administration	3
	A further course from category B.	3

(2) *MANAGEMENT INFORMATION SYSTEMS CONCENTRATION*

Category A: 6 credits required.

(46)	Computer Based Information Systems	3
(49)	Information Systems Design	3
(47)	Systems Analysis and Modelling	3

Category B: 3 credits required

(48)	Business Programming Development	3
(–)	Computers in Data Processing I	3
(–)	Computer Structure and Assembly Language Programming (see Engineering Department).	3

Category C: 9 credits required.

(50)	Information Systems Administration	3

(51)	Advanced Topics – Computer Systems Applications	3
(52)	Minicomputers, Microprocessors and their Applications	3
(53)	Control and Verification of Computer Systems	3
	A further course from Category B.	3

(3) *MARKETING CONCENTRATION*

Required:

(68)	Marketing Research	3

Category A: 6 credits required

(69)	Consumer Behaviour	3
(66)	Marketing Management II	3
(72)	Industrial Marketing	3

Category B: 6 credits required

(70)	Advertising Management	3
(71)	Sales Management	3
(65)	Physical Distribution	3
(73)	Retail Management	3

Category C: 3 credits required

(67)	Marketing Planning	3

Plus an additional 3 credits from any category.

(4) *ORGANIZATIONAL BEHAVIOUR AND PERSONNEL CONCENTRATION*

Category A: 6 credits required

(78)	Creativity, Innovation and Management	3
(76)	Group Dynamics and Interpersonal Relations	3
(79)	Personnel Administration	3
(80)	Compensation	3
(55)	Seminar in Organizational Strategy	3

Category B: 12 credits required

(31)	Health Care Organization	3
(34)	Introduction to Industrial Relations	3
(69)	Consumer Behaviour	3
(68)	Marketing Research	3
(35)	Collective Bargaining	3
	Any course(s) not taken to fulfil Category A requirement.	

Students who are able to take courses during the day should consult the Faculty of Management, B.Com. calendar for further possibilities with the concentrations listed above.

D. B.Com. elective courses – credits outstanding for completion of minimum credit requirement.

Any courses listed but not used to fulfil Secondary Core or Concentration requirements may be used as electives as well as those listed below.

(12)	External Auditing	3
(14)	Taxation II	3
(22)	Transportation Economics	3
(23)	Land Economics	3
(27)	Investments and Portfolio Management	3
(28)	Capital Markets and Institutions	3

(29)	Independent Studies in Management	3
(32)	Hospital Organization and Management	3
(39)	International Financial Management	3
(42)	Land Law	3
(43)	Transport Law and Regulations	3
(81)	Cases and Issues in Personnel	3
(77)	Strategies of Organizational Development	3
(89)	Real Estate Investment Analysis	3
(92)	Transport. Policy	3

9.9 COOPERATIVE PROGRAMS

Membership in the association cooperating with McGill in offering some of these programs is recommended and in some cases required for students proceeding towards the designation offered by the association. For credit towards McGill Certificates a minimum mark of 55% in each course is required as noted in the section on Examinations. One grade of D is permitted for Certificate Programs. Professional requirements may vary and students must know the regulations of their association especially with regard to pass/fail marks and other examination conditions.

The following organizations have accepted the Centre's courses as credit towards the completion of their program as follows:

9.9.1 ADMINISTRATIVE MANAGEMENT SOCIETY

This association cooperates with McGill in the offering of its Certificate programs and recognizes individual courses and programs as appropriate for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in membership or further information on the organization should contact Mr. J.R. Lachance, Singer Co. of Canada Ltd., P.O. Box 1014, St. Jean, P.Q. J3B 7A7 (Telephone: 658-0090)

9.9.2 APPRAISAL INSTITUTE OF CANADA

The title "Accredited Appraiser Canadian Institute" (A.A.C.I.) will be awarded to students who have satisfied the membership requirements of the Institute and who have successfully completed the Certificate in Real Estate Appraisal and the Certificate in Real Estate Analysis.

Further information may be obtained from Mr. K.D. Leonard, 245 Victoria Street, Suite 801, Montreal, Québec H3Z 2M6 (Telephone: 931-5873)

9.9.3 ASSOCIATION DES PROFESSIONNELS EN RESSOURCES HUMAINES DU QUÉBEC

This association cooperates with McGill in the offering of its Certificate programs and recognizes individual courses and programs as appropriate for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in membership or further information on the organization should contact L'Association des professionnels en ressources humaines du Québec, 1253 McGill College Avenue, Suite 192, Montreal, Québec H3B 2Y5. Attention: Miss Madeleine Sénécal (Telephone: 879-1636)

9.9.4 ASSOCIATION FOR SYSTEMS MANAGEMENT

This association cooperates with McGill in the offering of its Certificate programs and recognizes individual courses and programs as appropriate for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in membership or further information on the organization should contact the Association for Systems Management, Vice President, Education, P.O. Box 1325, Place Bonaventure, Montreal, Québec (Telephone: 695-1668)

9.9.5 ASSOCIATION OF PROFESSIONAL PLACEMENT AGENCIES AND CONSULTANTS

This association cooperates with McGill in the offering of its Certificate programs and recognizes individual courses and programs as appropriate for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in membership should be directly involved in professional employment placement agency work. For further information on the organization students should contact Aline Hooper, APPAC, c/o Aline Hooper Associates Inc., 2121 Trans Canada Highway, # 401, Dorval, Québec H9P 1J3 (Telephone: 684-1275)

9.9.6 CANADIAN ASSOCIATION OF PHYSICAL DISTRIBUTION MANAGEMENT

This association cooperates with McGill in the offering of its Certificate Programs and recognizes individual courses and programs as appropriate

for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in membership or further information on the organization should contact the Canadian Association of Physical Distribution Management, Director of Education, P.O. Box 1101, Station C, Scarborough, Ontario M1H 1A0 (Telephone: (416) 766-8233)

9.9.7 CANADIAN CREDIT INSTITUTE

This Institute cooperates with McGill in the offering of its Certificate Programs and recognizes individual courses and programs as appropriate for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in membership or further information on the organization should contact Miss Hilda R. Witte, F.C.I. c/o Creditel of Canada Ltd., 7170 St. Lawrence Blvd., Montreal, Québec H2S 3E2 (Telephone: 270-7111)

9.9.8 CANADIAN INSTITUTE OF MANAGEMENT

Completion of the McGill Certificate in Management meets some of the requirements of the Canadian Institute of Management's Certificate in Management and Administration (C.I.M.). To follow the program students must register with the Institute. Full information on the cooperative arrangements can be obtained from the Centre.

The Institute also offers the Professional Manager (P.Mgr.) designation to its qualified senior members. Students interested in membership or further information on the organization should contact Mr. Galal Mattar, Education Chairman, Canadian Institute of Management, P.O. Box 1238, Station 'B', Montreal, Québec H3B 3K3 (Telephone: 731-3931)

9.9.9 CANADIAN INSTITUTE OF TRAFFIC AND TRANSPORTATION

Completion of the Certificate in Management and the Certificate in Transportation and satisfying the other requirements of the Canadian Institute of Traffic and Transportation will qualify the candidates for membership in the Institute and as a member the use of the designation "CITT".

The two full year courses, Canadian Institute of Traffic and Transportation Distribution I and II, are offered onthe McGill campus by the Institute. NO EXEMPTIONS ARE ALLOWED FOR THESE TWO COURSES.

Full information on the cooperative arrangements can be obtained from the Centre. Students interested in membership or further information on the organization should contact the Canadian Institute of Traffic and Transportation, 44 Victoria Street, Suite 515, Toronto, Ontario M5C 1Y2 Attention Mrs. A. May (Telephone: (416) 363-5696)

9.9.10 CANADIAN PUBLIC RELATIONS SOCIETY (QUÉBEC) INC.

This association cooperates with McGill in the offering of its Certificate programs and recognizes individual courses and programs as appropriate for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested inmembership or further information on the organization should contact the Canadian Public Relations Society (Québec) Inc., c/o Mrs. Carol Ann Gauthier, 1500 Stanley Street, Suite 315, Montreal, Québec H3A 1R3 (Telephone: 842-7637)

9.9.11 LA CORPORATION PROFESSIONNELLE DES COMPTABLES GÉNÉRAUXLICENCIÉS DU QUÉBEC (Certified General Accountant – C.G.A.)

All students currently following or wishing to follow the C.G.A. program at McGill must provide the department with a complete record of their academic standing in the professonal program.

The Certificate in Accounting in conjunction with the Certificate in Management fulfil the educational requirements of La Corporation Professionnelle des comptables généraux licenciés du Québec and with the appropriate options prepare students to write the entrance examinations of the Corporation.

Full information on the cooperative arrangements can be obtained from the Centre. Students interested in membership or further information on the organization should contact La Corporation Professionnelle des comptables généraux licenciés du Québec, 152 Notre-Dame East, 3rd floor, Montreal, Québec H2Y 3P6 (Telephone: 861-1823)

9.9.12 LA CORPORATION PROFESSIONNELLE DES ADMINISTRATEURS AGRÉÉS du Québec (Chartered Administrator – C. Adm.)

This association cooperates withMcGill in the offering of its Certificate programsand recognizes individual courses and programs as appropriate for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in membership or further information on the organization should contact Mr. André J. Tanguay, Adm. A. Directeur Général, La Corporation Professonnelle des administrateurs agréés du Québec, 53, rue d'Auteuil Québec, P.Q. G1R 4C2 (Telephone: (418) 692-2568) or dial 0-zenith 27-690.

9.9.13 LA CORPORATION PROFESSIONNELLE DES ÉVALUATEURS AGRÉÉS DJ QUÉBEC (Chartered Appraiser – C. App.)

In cooperation with the Corporation Professionnelle des évaluateurs agréés du Québec, the Cen-

tre for continuing Education offers courses leading to this professional recognition. Successful candidates, upon completion of all requirements of the Corporation, will be allowed to use the title C. App. (Chartered Appraiser) or E.A. (Évaluateur Agréé). Students interested in membership or further information on the organization should contact Mr. Gilles Dion, Directeur-administratif, Corporation Professionnelle des Évaluateurs Agréés du Québec, Place du Canada, Montreal, Québec H3B 2N2. (Telephone: 861-9729).

9.9.14 LA CORPORATION PROFESSIONNELLE DES COMPTABLES EN ADMINISTRATION INDUSTRIELLE DU QUÉBEC (Management Accountant – R.I.A.)

All students currently following or wishing to follow the R.I.A. program at McGill must provide the department with a complete record of their academic standing inthe professional program.

The Certificate in Accounting, in conjunction with the Certificate in Management fulfil the educational requirements of La Corporation Professionnelle des comptables en administration industrielle du Québec and with the appropriate options prepare students to write the professional qualifying examinations of the Corporation.

Full information on the coperative arrangements can be obtained from the Centre. Students interested in membership or further information on the organization should contact La Corporation Professionnelle des comptables en administration industrielle du Québec, 1425 Mountain Street, Montreal, Québec H3G 1Z3 (Telephone: 849-5767)

9.9.15 INSTITUTE OF CANADIAN BANKERS

The Institute cooperates with McGill in the offering of its Certificate Programs and recognizes individual courses and programs as appropriate for their purposes. The McGill Certificate in Banking Administration meets the requirements of the Institute for the designation Fellow of the Institute of Canadian Bankers. Many other McGill courses and programs are recognized by the Institute in its Continuing Education Program. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in further information on the organization should contact the Institute of Canadian Bankers, Montreal Regional Council Co-ordinator, 1801 McGill College Avenue, Suite 720, Montreal, Québec h3A 2N4 (Telephone: 282-9480)

9.9.16 INSTITUTE OF CHARTERED SECRETARIES AND ADMINISTRATORS

This Institute cooperates with McGill in the offering of its Certificate Programs and recognizes individual courses and programs as appropriate for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in membership or further information on the organization should contact the Institute of Chartered Secretaries and Administrators c/o Montreal Board of Trade, Commerce House, 1080 Beaver Hall Hill, 6th floor, Montreal, Québec H2Z 1S9 (Telephone: 878-4651)

9.9.17 INSTITUTE OF INTERNAL AUDITORS

This Institute cooperates with McGill in the offering of its Certificate Programs and recognizes individual courses and programs as appropriate for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in membership or further information on the organization should contact the Institute of Internal Auditors, Montreal Chapter, P.O. Box 1332, Place Bonaventure, Montreal, Québec H5A 1H1.

9.9.18 INSURANCE BROKERS' ASSOCIATION OF THE PROVINCE OF QUÉBEC

This association cooperates with McGill in the offering of its Certificate Programs and recognizes individual courses and programs as appropriate for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in membership or further information on the organization should contact the Insurance Brokers' Association of the Province of Québec, 300 Leo Pariseau Street, Room 801, Montreal, Québec (Telephone: 842-2591)

9.9.19 INSURANCE INSTITUTE OF QUÉBEC

This Institute cooperates with McGill in the offering of its Certificate programs and recognizes individual courses and programs as appropriate for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in membership or further information on the organization should contact the Insurance Institute of Québec, 261 St. James Street, Montreal, Québec H2Y 1M6 (Telephone: 845-2238l)

9.9.20 INTERNATIONAL ASSOCIATION OF BUSINESS COMMUNICATORS

This association cooperates with McGill in the offering of its Certificate programs and recognizes individual courses and programs as appropriate for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in membership or further information on the organization should contact the International Association of Business Communicators, June Anguos Public Affairs Air Canada, 38th floor, 1 Place Ville Marie, Montreal H3B 3P7 (Telephone: 877-4446)

9.9.21 MINISTÈRE DES AFFAIRES MUNICIPALES

Par disposition du Ministre des Affaires municipales, les cours conduisant au Certificat de McGill en Évaluation Immobilière s'offrent aussi en français. Le certificat répond à quelques exigences du programme universitaire de l'institut canadien des évaluateurs et les cours permettent à l'étudiant de se familiariser avec les normes et méthodes reconnues d'évaluation foncière de la province de Québec, ainsi que par le manuel d'évaluation foncière et le règlement numéro un du ministère des affaires municipales. Pour obtenir plus de renseignements au sujet du programme, veuillez communiquer avec Mr. Gerald Lellbach, Directeur du Service de l'accueil, Governement du Québec, Ministère des Affaires municipales, Direction générale de l'évaluation Foncière, 1039 de la Chevrotière, Québec, Québec G1R 4Z3 (Téléphone: 418-643-4993)

9.9.22 PROJECT MANAGEMENT INSTITUTE (MONTREAL CHAPTER)

This Chapter of the Institute cooperates with McGill and Concordia Universities in offering courses. Full information on the cooperative arrangements can be obtained from the Management Certificate Department of the Centre for Continuing Education, McGill University or the Centre for Building Studies, Concordia University. Students interested in membership or further information on the organization should write to the Project Management Institute (Montreal Chapter), P.O. Box 85, Station 'H', Montreal, Québec, H3G 1R0.

9.9.23 QUEBEC RISK AND INSURANCE MANAGEMENT ASSOCIATION

This association cooperates with McGill in the offering of its Certificate programs and recognizes individual courses and programs as appropriate for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in further information on the organization should contact Mr. John Perason, c/o Celanese Canada Inc., 800 Dorchester St. W., Montreal, Québec H3C 3K8. (Telephone: 878-1581)

9.9.24 REAL ESTATE INSTITUTE OF CANADA

The FRI and IREM divisions cooperate with McGill in the offering of their Certificate programs and recognize individual courses and programs as appropriate for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in membership or further information on the organizatin should contact the Real Estate Institute of Canada, 1080 Beaver Hall Hill, Suite 102, Montreal, Québec H2Z 1T3. Attention Rena Chaplin (Telephone: 861-2693)

9.9.25 TRUST COMPANIES INSTITUTE

This Institute cooperates with McGill in the offering of its Certificate programs and recognizes individual courses and programs as appropriate for their purposes. Full information on the cooperative arrangements can be obtained from the Centre. Students interested in information regarding the Institute's business, technical and management education programs should contact the Trust Companies Institute, 11 Adelaide Street West, Suite 400, Toronto, Ontario, M5H 1L9 (Telephone: (416) 364-1210)

9.10 COURSE OFFERINGS

ACCOUNTING

(1) INTRODUCTION TO FINANCIAL ACCOUNTING (3 credits)

280-211X-61 Tuesdays
280-211X-68 Tuesdays – French Section

Accounting concepts and principles; the accounting model and the measurement of accounting income; the balance sheet.

(2) INTRODUCTION TO MANAGEMENT ACCOUNTING (3 credits) OFFERED WINTER ONLY

271-213Y-51 Mondays
PREREQUISITE: Introduction to Financial Accounting

This course is intended for students not concentrating in Accounting, but desiring an introduction to Managerial Accounting and Cost Accounting. Accounting as an aid to management in the planning and control of operations. Students cannot count both 271-213 and 271-313 for credit.

(3) FINANCIAL ACCOUNTING I (3 credits)

271-311X-61 Tuesdays
PREREQUISITE: Introduction to Financial Accounting

A detailed examination of the elements of the income statement and the balance sheet with emphasis on the role of inventories and depreciation.

(4) FINANCIAL ACCOUNTING II (3 credits)

271-312X-61 Tuesdays
PREREQUISITE: Financial Accounting I

Development of accounting theory and practice; a detailed review of the accounting for current and long term assets and liabilities; intangibles and shareholders' equity; the treatment of prior period adjustments and extraordinary items in

the determination of accounting income; working capital and flow of funds, financial statement presentation; partnerships.

(5) ACCOUNTING THEORY (3 credits)
Offered Winter Only

271-411Y-61 Tuesdays
PREREQUISITE: Financial Accounting II

The course will focus on developing a cohesive body of postulates which describe the discipline of accounting. A normative model (as opposed to positive) will provide the foundation for this endeavour.

(6) FINANCIAL ACCOUNTING III (3 credits)

271-414X-61 C.G.A. Tuesdays
271-414X-61 R.I.A. Tuesdays
PREREQUISITE: Financial Accounting II

The underlying concepts and accounting treatment of intercorporate investments, business combinations, purchase and pooling of interests including examination of the professional recommendations. Reorganization valuations of business enterprises; branches – domestic and foreign; consignments; instalment sales. Accounting for corporate income taxes, current value accounting, leases, human resources and goodwill.

(7) MANAGEMENT ACCOUNTING I (3 credits)

271-313X-51 Mondays
PREREQUISITE: Financial Accounting I

Cost accounting, budgeting and budgetary control standard costing, breakeven analysis, variable costing, costs for decision-making. Students cannot count 271-213 and 271-313 for credit.

(8) MANAGEMENT ACCOUNTING II (3 credits)

271-415X-51 Mondays
PREREQUISITES:
1. Management Accounting I
2. Introductory Management Statistics

A critical evaluation of accounting control systems and some related quantitative business controls. Conceptual and measurement problems in evaluating performance, including problems of decentralization. Control of the data-information flow.

(9) MANAGEMENT ACCOUNTING III (3 credits)
OFFERED WINTER ONLY

271-416Y-51 Mondays
PREREQUISITES:
1. Organizational Policy
2. Management Accounting II
3. Finance I

A survey of planning and decision concepts and models with a view to specifying the relevant data or information for planning and a number of common classes of business decisions. Behavioural and information analysis of the planning/control function using recent literature and research results which address current problems and solutions are emphasized.

(10) INTRODUCTION TO AUDITING (3 credits)
OFFERED FALL ONLY

271-413X-81 Thursdays
PREREQUISITE: Financial Accounting II

The role and responsibilities of auditors; topics include: internal control and its effect on auditors; audit evidence; procedures for collecting and evaluation of evidence including statistical techniques; audit reports.

* **(11) OPERATIONAL AUDITING (3 credits)**
OFFERED WINTER ONLY

621-430Y-71 Wednesdays
PREREQUISITE: Introduction to Auditing

The internal use of auditing techniques to appraise the control provided by accounting and management systems. The challenge of reporting audit findings to prompt management action. Topics: objectives of internal audit, responsibilities and relationships, planning audit projects, preliminary surveys, sampling, computer auditing, operational areas, reporting. This course may not be taken for degree credit.

(12) EXTERNAL AUDITING (3 credits)
OFFERED WINTER ONLY

621-431Y-71 Wednesdays
PREREQUISITE: Introduction to Auditing

Auditing standards; auditor's legal rights and responsibilities; problems relating to: incorporated business; consolidated statements, prospectuses; events subsequent to balance sheet date; audit of E.D.P. systems; audits requiring special considerations; investigations and special reports; current developments in auditing standards.

(13) TAXATION I (3 credits)

271-412X-51 Mondays
PREREQUISITE: Financial Accounting II

An examination of Federal Income Tax and its impact on business operations: tax treatment of individuals, partnerships and corporations; and international aspects. Proposals for tax changes since the Carter Commission Report will be reviewed and emphasis will be placed on concepts underlying most recent legislation.

*Pending Senate Approval.

(14) TAXATION II (3 credits)

621-441X-51 Mondays
PREREQUISITE: Taxation I

The development and application of topics presented in the introductory income tax course; tax planning matters are dealt with throughout; corporate reorganizations and liquidations; purchase and sale of a business; surplus stripping and estate planning; primary emphasis is on the corporation and its shareholders.

BANKING MANAGEMENT

* **(15) LAW AND BANKING PRACTICE(3 credits) OFFERED FALL ONLY**

628-271X-51 Mondays
FEE: T.B.A.
PREREQUISITE: Advanced Student

Topics include sources of law, the role of the banker, real property, mortgages, commercial financing, leases, business structure, taxation, credit transactions, promissory notes, guarantees, debt collection, consumer protection, using a lawyer.

* **(16) BANKING MANAGEMENT (3 credits)**

628-471
FEE: T.B.A.
PREREQUISITE: Advanced Student

First: A theoretical approach to the decision making environment of the banks; the development of policies consistent with wealth maximization criteria; techniques of analysis to assess bank performance.
Second: a simulation model of the banking industry; top management's point of view on the major decision areas affecting a bank's soundness and profitability. Teams of students manage banks in a competitive environment, considering: interest rates spread; assets and liabilities portfolio; reserve; liquidity; operating expenses including marketing and human resources; capital expenditures and long term funding.

BUSINESS COMMUNICATIONS

(17) COMMUNICATIONS SKILL IN MANAGEMENT (3 credits)

278-386X-81 Thursdays
278-386X-88 Thursdays
French Section
PREREQUISITE: A practical knowledge of English/French

*Pending Senate Approval.

To develop in prospective managers the skills needed to organize ideas and information for effective, persuasive oral and written communication. The role of communication in the business world and the major factors influencing the process will be examined. Students will be given ample opportunity to practice letter writing, oral presentation, conducting business meetings and report writing. Only students with proficient skills in the language of instruction will be admitted to the course.

COUNSELLOR EDUCATION

▲ **(18) PRINCIPLES OF HELPING RELATIONSHIPS (3 credits)**

412-401

A course in the basic principles of human relationship and communication skills, approached from a theoretical and experiential viewpoint. An emphasis will be given to training in basic listening skills, interviewing techniques, and the interpretation of non-verbal behaviour in communication.

▲ **(19) PRACTICUM IN INTERVIEWING SKILLS (3 credits)**

412-404
PREREQUISITE: Principles of Helping Relationships

This course will enable students to become practitioners in the field of Applied Social Sciences. Theoretical principles of the helping relationship will be applied in particular situations. Demonstration, lecture, role-playing and psychodrama techniques will be used.

ECONOMICS

(20) MACRO ECONOMICS (3 credits)

629-201X-61 Tuesdays
629-201X-68 Tuesdays –
French Section

Introduction to the basic forces at work in our economic system; the concepts of national output and income; aggregate employment and the general level of prices; the role of money and the banking systems; fiscal and monetary policies; international economics; economic growth and development.

(21) MICRO ECONOMICS (3 credits)

629-202X-81 Thursdays
629-202X-88 Thursdays –
French Section

Economic analysis of the firm, its environment and behaviour; price-production policies; market

behaviour and performance under varying conditions of competition and monopoly; application of micro-economic theory to economic problems of the firm in the context of managerial decision-making.

(22) TRANSPORTATION ECONOMICS (3 credits)
OFFERED FALL ONLY

629-206X-61 Tuesdays

The role of freight purchases in the organization of industry; the market structure of carriers and users; the cost structure of carriers; the role of supply and demand in transportation prices; cost-oriented and demand-oriented pricing; economics of discriminatory and administered pricing; restriction of trade; western economic opportunity conference of 1st ministers and changes in transportation legislation.

(23) LAND ECONOMICS (3 credits)
OFFERED FALL ONLY

629-301X-81 Thursdays
629-301X-88 Thursdays
French Section
PREREQUISITES:
1. Macro Economics
2. Micro Economics

Primary emphasis on urban land economics and use. Specific topics are the pattern of land values and their determinants, land development patterns, land use competition theory, land use succession, the locational criteria of industrial, warehousing, wholesaling, retailing and residential land uses in metropolitan areas. Also an introduction to agricultural land economics and mineral values of land.

(24) MANAGERIAL ECONOMICS (3 credits)
OFFERED WINTER ONLY

280-393Y-51 Mondays
PREREQUISITES:
1. Macro Economics
2. Micro Economics

The application of economic theory to management problems and the economic foundations of marketing, finance, and production. Attention is given to the following topics: Price and cost analysis, demand and supply analysis.

FINANCE

(25) FINANCE I (3 credits)

280-341X-81 Thursdays
280-341Y-88 Thursdays
French Section - Winter Only
PREREQUISITES:
1. Introductory Management Statistics
2. Introduction to Financial Accounting
3. Micro Economics

An introduction to the principles, issues and institutions of Finance. Topics include valuation, risk, capital investment, financial structure, cost of capital, working capital management, financial markets, and securities.

(26) MANAGERIAL FINANCE (3 credits)
OFFERED WINTER ONLY

274-343Y-71 Wednesdays
PREREQUISITE: Finance I

A second course in Finance for students not specializing in a Finance Concentration. Topics addressed include short and long term asset and liability management, risk and diversification, and the nature of capital markets. The course format will be a mixture of cases, lectures, projects and discussions.

▲ **(27) INVESTMENTS AND PORTFOLIO MANAGEMENT (3 credits)**

274-441
PREREQUISITE: Managerial Finance

The application of investment principles and security analysis to the selection and comparison of equity and fixed income securities in the current economic and financial environment. Also covered are: Determinants of stock prices, growth models and portfolio diversification.

▲ **(28) CAPITAL MARKETS AND INSTITUTIONS (3 credits)**

274-442
PREREQUISITE: Finance I

The functions of the capital markets through flow of funds analysis and an examination of portfolio activities of financial intermediaries. Also covered are: Securities regulations and ethical considerations, the term structure of interest rates and risk and rates of return in debt and equity markets.

GENERAL MANAGEMENT

(29) INDEPENDENT STUDIES IN MANAGEMENT (3 credits)

278-489
PREREQUISITE: Permission of the Associate Director

Research, reading or field projects, permitting independent study under the guidance of a staff member specializing in the field of interest. Projects have to be arranged individually with instructors. A detailed student proposal must be submitted to the Associate Director during the first week of classes.

*Pending Senate Approval.

* **(30) PRINCIPLES OF MANAGEMENT (3 credits)**

628-281X-61 Tuesdays
628-281X-68 Tuesdays – French Section – Fall Only

A broad introduction to management. The case method is used allowing the student to participate in solving simulated business problems. The functional areas of Finance, Marketing Personnel and Production of both goods and services are examined to learn how managers analyze situations and integrate policy setting with decision making.

HEALTH CARE

(31) HEALTH CARE ORGANIZATION (3 credits)
OFFERED FALL ONLY

278-481X-81 Thursdays

Overview and study of the present Canadian health care system: its components, organization, financing and management uncertainties. Interaction and interface between the health system and other social systems; roles and various levels of government and of the private sector. Close to half the course focuses on the Québec health care system: its recent evolution, present organization and foreseeable directions.

(32) HOSPITAL ORGANIZATION AND MANAGEMENT (3 credits)
OFFERED WINTER ONLY

278-490Y-81 Thursdays

The hospital in relation with other health care organizations; major user groups. Hospital organization: Legal, functional and structural aspects. Hospital management: Defining priorities, offering services to consumer groups, budgeting and controlling resource utilization, managing interpersonal and intergroup relationships.

*▲ **(33) DEPARTMENTAL MANAGEMENT IN HEALTH AND SOCIAL SERVICES (3 credits)**
OFFERED WINTER ONLY

628-405Y-71 Wednesdays
PREREQUISITE: 27 credits in Certificate in Health and Social Services Management

The application of current management thinking to the management of departments in service settings. Case studies will be used to illustrate course content. Topics include: history of Canadian Health and Social Services; overview of Management theories and processes, managing the personnel functions; manpower planning; labour relations; managing the financial component; methods improvement; job design; legal and ethical requirements; changing patterns of delivery systems.

*Pending Senate Approval.

INDUSTRIAL RELATIONS

(34) INTRODUCTION TO INDUSTRIAL RELATIONS (3 credits)
OFFERED FALL ONLY

279-294X-61 Tuesdays

An introduction to labour-management relations, the structure, function and government of labour unions, labour legislation, the collective bargaining process, and the public interest in industrial relations.

(35) COLLECTIVE BARGAINING (3 credits)
OFFERED WINTER ONLY

279-394Y-61 Tuesdays
PREREQUISITE: Introduction to Industrial Relations

Principles in collective bargaining in Canada and abroad. The structure of the bargaining parties and the structure of bargaining itself. The course is problem-oriented and relies on empirical data and case problems.

▲ **(36) LABOUR LAW (3 credits)**

279-494
PREREQUISITE: Advanced Student

Introduction to the basic concepts of labour law relevant to the practice of industrial relations. Course will review the historical development of labour law in certain social and legal systems and examine the culmination of this development in the legislative enactments and jurisprudence of Canadian jurisdictions and certain comparative foreign models.

▲ **(37) HUMAN RESOURCES IN INDUSTRIAL SOCIETY (3 credits)**

279-501
PREREQUISITE: Advanced Student

Covers the fundamentals of manpower analysis and policy making for the human resources of Canada and Québec. Introduces a fundamental framework for manpower analysis and policy formations. Reviews occupational forecasting in manpower estimation and, provides an introduction to further human resource analysis.

INTERNATIONAL BUSINESS

(38) INTRODUCTION TO INTERNATIONAL BUSINESS (3 credits)
OFFERED FALL ONLY

278-382X-51 Mondays

An introduction to the expanded world of the international businessman. Economic foundations of international trade and investment. The international trade, finance, and regulatory frameworks. Relations between international

companies and nation-states, including costs and benefits of foreign investment and alternative controls and responses. Effects of local environmental characteristics (educational, sociological, economic, legal, political) on the operations of multinational enterprises.

(39) INTERNATIONAL FINANCIAL MANAGEMENT (3 credits)
OFFERED WINTER ONLY

278-482Y-51 Mondays
PREREQUISITE: Finance I

This course will examine the international financial environment as it affects the multinational manager. In-depth study of the various balance of payments concepts, adjustment of the external balance, and the international monetary system will be followed by a review of theory and institutional aspects of the foreign exchange and the international (eurodollar) markets.

LAW

(40) BUSINESS LAW I (3 credits)

278-384X-71 Wednesdays
278-384X-78 Wednesdays – French Section

An introduction to law and legal process, including a review of sources of law, court system, and organization and classifications of law. A brief summary of procedural laws as they may affect business transactions, rules of private international law. A study of general principles of contract, protection of creditors, and property law. A study of various forms of guarantees, such as privileges, hypothecs, and commercial pledges.

(41) BUSINESS LAW II (3 credits)

278-388X-71 Wednesdays
278-388Y-78 Wednesdays French Section
PREREQUISITE: Business Law I

Special contracts, such as sales, lease, mandate and loan. Business organizations, government legislation, the impact on business and marketing, principally as a result of the combines investigation legislation and consumer protection legislation. A brief review of principles in bankruptcy, bills of exchange and insurance.

(42) LAND LAW (3 credits)
OFFERED WINTER ONLY

278-486Y-61 Tuesdays
278-486Y-68 Tuesdays French Section
PREREQUISITE: Business Law I or equivalent

An overview of the legal aspects of real property and real estate transactions. Topics include: the creation of interests, rights and responsibilities in land; transactions in the sale and purchase of immovables.

(43) TRANSPORT LAW AND REGULATIONS (3 credits)
OFFERED FALL ONLY

628-341X-81 Thursdays
PREREQUISITE: Business Law I

Law as it relates to all modes of public transportation in Canada; law of the carriage of goods and the rights and liabilities of the carriers, shippers and consignees; the National Transportation Act and the legal consequences of the declared national transportation policy.

* **(44) LEGAL ASPECTS OF HEALTH CARE (3 credits)**
OFFERED WINTER ONLY

628-452Y-61 Tuesdays
PREREQUISITE: Health Care Organization

An introduction to Medico-legal aspects of patient care; major pieces of legislation pertinent to the practice of health care will be examined.

MANAGEMENT INFORMATION SYSTEMS

(45) MANAGEMENT INFORMATION SYSTEMS (3 credits)

280-331X-51 Mondays
280-331X-58 Mondays – French Section – Fall Only

An introduction to computer systems and program flowcharting. Specific emphasis is placed on developing the ability to program (in Fortran) and utilize the resources available on the McGill time-sharing system. Problems of implementing computer systems in the organization are discussed.

(46) COMPUTER BASED INFORMATION SYSTEMS (3 credits)

273-332X-71 Wednesdays
PREREQUISITE: Management Information Systems

Methodology, techniques and components of systems design and programming, with emphasis on management information systems.

(47) SYSTEMS ANALYSIS AND MODELLING (3 credits)
OFFERED FALL ONLY

* Pending Senate Approval.

273-333X-71 Wednesdays
PREREQUISITE: Management Information Systems

Theoretical approaches to systems analysis are investigated. Analytical, algoritmic and heuristic optimization methods are considered from the viewpoint of management decision-making. Emphasis is placed on developing programs to solve related problems.

(48) BUSINESS PROGRAMMING DEVELOPMENT (3 credits)
OFFERED FALL ONLY

273-334X-51 Mondays
PREREQUISITE: Computer Based Information Systems

Program development in business. Topics include: preparing program specifications, selecting and designing program standards, developing error controls and audit trails, designing test forms and test data. COBOL, RPG and O/S JCL are used as a vehicle to teach the various topics.

(49) INFORMATION SYSTEMS DESIGN (3 credits)
OFFERED FALL ONLY

273-431X-61 Tuesdays
PREREQUISITE: Computer Based Information Systems

Methods and procedures of designing business information systems are discussed. A comprehensive case study extending throughout the term emphasizes the application of the methodology.

(50) INFORMATION SYSTEMS ADMINISTRATION (3 credits)
OFFERED WINTER ONLY

273-432Y-81 Thursdays
PREREQUISITE: Business Programming Development

This course covers the problem of managing the information systems resource. A combination of case studies and lectures is used to illustrate the problems of computer acquisition, in-house or via service bureaux of information systems development, of minicomputer proliferation, of organisational development and of other areas of importance to information systems managers.

(51) ADVANCED TOPICS – COMPUTER SYSTEMS APPLICATIONS (3 credits)
OFFERED WINTER ONLY

273-434Y-51 Mondays
PREREQUISITE: Information Systems Design

This is an advanced seminar for senior students. Topics will be selected from current issues such as data base applications, on-line systems, privacy and computers, etc.

▲ **(52) MINICOMPUTERS, MICROPROCESSORS AND THEIR APPLICATIONS (3 credits)**

273-435
PREREQUISITES: Information Systems Design

The analysis, design and implementation of business applications using minicomputers and microprocessors. Relevant hardware and software developments.

(53) CONTROL AND VERIFICATION OF COMPUTER SYSTEMS (3 credits)
OFFERED WINTER ONLY

273-533Y-71 Wednesdays
PREREQUISITES:
1. Business Programming Development
2. Information Systems Design

Advanced level problems and methods of establishing effective controls of computer systems, evaluation of controls, and computer aids to evaluation and auditing.

MANAGEMENT POLICY

(54) ORGANIZATIONAL POLICY (3 credits)

280-323X-51 Mondays
280-323X-58 Mondays French Section
PREREQUISITE: Advanced Student

The primary functions of general management, particularly the formation of a corporate strategy that relates the company's opportunities to its resources, competence, and leadership style. It also involves developing a system for measuring organization effectiveness.

(55) SEMINAR IN ORGANIZATIONAL STRATEGY (3 credits)
OFFERED FALL ONLY

276-562X-71 Wednesdays
PREREQUISITE: Advanced Student

The central significance of policy and strategy to top management and their organizations. The effect of environments (external and internal) on the functioning of an organization. The detection of opportunities and threats. An exploration of how organizations set objectives, formulate and implement effective strategies. Attention is focused on the role of the general manager in shaping and leading an organization. Will be run in a seminar form and will revolve around a set of readings, case studies, and a short field project whose findings will be presented to the executive committee of a previously selected company.

▲ **(56) BUSINESS IN SOCIETY I (3 credits)**

276-565
PREREQUISITE: Advanced Student

An examination of the traditional capitalist ideology; the dynamic operation of the system; business ethics and values that are compatible with the system; economic, cultural and social contradictions of the system; policies and programs designed to make the system more effective; management in a pluralistic society.

* **(57) COLLEGE ALGEBRA AND FUNCTIONS (3 credits)**

627-001X-71 Wednesdays
627-001X-78 Wednesdays French Section
PREREQUISITE: Remedial Mathematics or Diagnostic Test (see page 100)

Theory of quadratic equations, arithmetic and geometric progressions, permutations and combinations, binomial theorem, solution of logarithmic and exponential equations, absolute values, solution of simple inequalities, sigma notation, function notation and remainder theorem, Cartesian coordinate system to include equations of the straight line and circle, graphs of functions.

(58) SURVEY OF BASIC MATHEMATICS I (3 credits) OFFERED FALL ONLY

627-203X-81 Thursdays
PREREQUISITE: College Algebra and Functions

Analytic geometry of the straight line, circle and parabola; limits, continuity, the derivative; rules of differentiation, the differential; curve sketching, applications to optimization problems and to economics; partial differentiation, the method of least squares.

(59) SURVEYOF BASIC MATHEMATICS II (3 credits) OFFERED WINTER ONLY

627-204Y-81 Thursdays
PREREQUISITE: Survey of Basic Mathematics I

Integration, separable differential equations, definite integral, improper integrals, applications to probability density functions; matrix algebra, vector spaces, rank, solution of m linear equations in n unknowns, determinants.

(60) INTRODUCTORY MANAGEMENT STATISTICS (3 credits)

280-273X-71 Wednesdays
280-273X-78 Wednesdays French Section – Fall Only
PREREQUISITE: College Algebra and Functions or Diagnostic Test

Elementary statistical concepts, methods and applications. Descriptive statistics, probability theory, random variables, sampling distributions, estimation, hypothesis testing, linear regression and correlation. The presentation of the material will rely heavily on examples and illustrations taken primarily from business. Case studies will be discussed in class.

(61) STATISTICAL METHODS IN MANAGEMENT (3 credits) OFFERED WINTER ONLY

280-274Y-81 Thursdays
PREREQUISITES:
1. Survey of Basic Mathematics II
2. Introductory Management Statistics

This course will treat in greater depth the latter topics introduced in Introductory Management Statistics. In addition, topics such as tests of goodness-of-fit, analysis of variance, multiple regression and time series analysis will be covered. Illustrative examples and case studies taken from business will be used.

(62) OPERATIONS RESEARCH (3 credits) OFFERED FALL ONLY

280-373X-51 Mondays
PREREQUISITE: Introductory Management Statistics

Introduction to decision analysis and risk attitudes, linear programming and simulation. The course stresses the formulation of problems and their solution by standard methods or by computer packages.

(63) PRODUCTION MANAGEMENT (3 credits) OFFERED WINTER ONLY

277-472Y-61 Tuesdays
PREREQUISITE: College Algebra and Functions or Permission of Associate Director

The effects of an operating manager's decisions on the firm, its competitive position and its risk exposure. Production design; production methods; jobshop, flowshop or project organization of work; plant location, capacity and lay-out; make-buy decisions; production balancing; equipment selection; work methods and standards; compensation methods; forecasting, planning; scheduling and inventory control.

MARKETING

(64) MARKETING MANAGEMENT I (3 credits)

280-352X-71 Wednesdays

* Pending Senate Approval.

280-352X-78 Wednesdays French Section

An introduction to marketing principles and management, focusing on the problem solving and decision making from the marketing manager's perspective. The marketing concept; marketing strategies; marketing research; buyer behaviour; product and price policies; advertising, distribution and sales force decision. The course relies on lectures, text material and case studies.

(65) PHYSICAL DISTRIBUTION (3 credits)
OFFERED WINTER ONLY

275-353Y-71 Wednesdays
PREREQUISITE: Marketing Management I

Systems approach to physical distribution; traffic management; plant and warehouse location; inventory control; information flows and order processing; supply scheduling; total cost planning; organizational patterns.

(66) MARKETING MANAGEMENT II (3 credits)

275-354X-51 Mondays
PREREQUISITES:
1. Introduction to Financial Accounting
2. Marketing Management I

In this course, each of the decision areas in marketing will be probed in depth. Its main emphasis will be on the use of marketing theory and concepts in the solution of realistic marketing problems. It will focus on decision making in a marketing context using cases, and readings.

(67) MARKETING PLANNING (3 credits)
OFFERED WINTER ONLY

275-357Y-51 Mondays
PREREQUISITES:
1. Marketing Management II
2. One other Marketing Course
3. Advanced Student

Marketing Planning is designed as a capstone to previous marketing courses, providing a transmission into actual business. The student learns a structured approach to developing a marketing plan, proceeding from corporate mission and objectives through to detailed marketing mix programs. Classes are a combination of lectures, discussions and cases. A field project provides the student with a real life marketing planning experience.

(68) MARKETING RESEARCH (3 credits)
OFFERED FALL ONLY

275-451X-61 Tuesdays
PREREQUISITES:
1. Marketing Management I
2. Introductory Management Statistics
3. Social Psychology

The student is exposed to the basic theoretical techniques and procedures common in marketing research today. Research design, sampling, questionnaire design, coding, tabulating, data analysis (including statistical techniques). Specialized topics may encompass advertising, motivation and product research; forecasting and location theory.

(69) CONSUMER BEHAVIOUR (3 credits)
OFFERED FALL ONLY

275-452X-71 Wednesdays
PREREQUISITE: Marketing Management I

Basic factors influencing consumer behaviour. Attention is focused on psychological, sociological and economic variables including motivation, learning, attitude, personality, small groups, social class, demographic factors and culture, to analyze their effects on purchasing behaviour.

(70) ADVERTISING MANAGEMENT (3 credits)
OFFERED FALL ONLY

275-453X-51 Mondays
PREREQUISITE: Marketing Management I

Surveys advertising and promotion in Canadian context. Examines activities as they relate to advertisers, the advertising agency, and media. Stresses advertising by objectives as the approach to developing strategy and tactics. Real examples from current campaigns are the focal point of class discussions.

(71) SALES MANAGEMENT (3 credits)
OFFERED WINTER ONLY

275-455Y-81 Thursdays
PREREQUISITE: Marketing Research

The various responsibilities of the sales manager as they relate to his sales force. These include the selection process, training alternatives, compensation and incentive plans, supervision and evaluation, and budgeting and forecasting. Case studies and discussions of sales force models are used.

(72) INDUSTRIAL MARKETING (3 credits)
OFFERED WINTER ONLY

275-456Y-51 Mondays
PREREQUISITE: Marketing Management II

Decision-making and management of the marketing effort in an industrial product context. The industrial marketing system; industrial purchasing; researching the industrial market; product, price distribution, selling and advertising decisions; strategies for industrial markets. A combination of lecture and case discussions is used.

(73) RETAIL MANAGEMENT (3 credits)
OFFERED WINTER ONLY

275-459Y-71 Wednesdays
PREREQUISITE: Marketing Management I

Principles and methods of management as applied to retailing, including location, organization, personnel, buying, inventory control, selling and advertising, services, expenses and profits.

ORGANIZATIONAL BEHAVIOUR

(74) SOCIAL PSYCHOLOGY (3 credits)

280-221X-51 Mondays
280-221X-58 Mondays French Section

Method and theories of analysing individual and small group behaviour. Topics include person perception, social motivation, attitudes, conformity, group structure, group dynamics and leadership phenomena. Experimental approach to social behaviour is emphasized.

(75) INTRODUCTION TO ORGANIZATIONAL BEHAVIOUR (3 credits)

280-222X-71 Wednesdays
280-222X-78 Wednesdays French Section

The social psychology of organizations: individual motivation and communication style; group dynamics as related to problem solving and decision making in the work place and a complex system as they relate to leadership style, work structuring and the larger environment. The continual interdependence of individual, group and organization task and structure.

(76) GROUP DYNAMICS AND INTERPERSONAL RELATIONS (3 credits)
OFFERED FALL ONLY

272-420X-81 Thursdays
PREREQUISITE: Introduction to Organizational Behaviour

Theory, research, and applications relating to group dynamics. Level of awareness of group dynamics and skills at functioning in work groups. Teaching/learning methods will include lecture and discussion, learning cells, skill development exercises and training laboratories (group development and interpersonal sensitivity).

▲ **(77) STRATEGIES OF ORGANIZATIONAL DEVELOPMENT (3 credits)**

272-421
PREREQUISITES:
1. Social Psychology
2. Introduction to Organizational Behaviour

An examination of planned change processes aimed at improving organizational problem solving and renewal processes – utilizing the applied behavioural sciences and experience based learning. Students will examine theory and techniques of organizational diagnosis and intervention.

▲ **(78) CREATIVITY, INNOVATION AND MANAGEMENT (3 credits)**

272-422
PREREQUISITE: Introduction to Organizational Behaviour

Innovation, creative personality characteristics, the management of creativity and the implication of innovation in organizations. The emphasis will be on studies of creative processes, individuals, and public and private organizations through exercises, case studies, interviews and selected readings.

(79) PERSONNEL ADMINISTRATION (3 credits)
OFFERED FALL ONLY

272-423X-81 Thursdays
PREREQUISITE: Introduction to Organizational Behaviour

The various issues involved in personnel administration. The development of the ability to design the personnel sybsystem within the firm and the problems encountered in such areas as recruitment, selection, motivation, communication and management training. Both a theoretical and case approach will be used.

(80) COMPENSATION MANAGEMENT (3 credits)
OFFERED WINTER ONLY

272-425Y-81 Thursdays
PREREQUISITE: Introduction to Organizational Behaviour

Compensation theories and their relation to compensation policies within organizations. Behavioural effects of compensation plans and how to make compensation plans more effective will be discussed. Nature of financial motivation, job design and job analysis, compensation practices, designing a compensation package, pay and organizational effectiveness.

▲ **(81) CASES AND ISSUES IN PERSONNEL (3 credits)**

272-522
PREREQUISITES:
1. Employment
2. Human Resource Training and Development
3. Compensation
4. Introduction to Industrial Relations
5. Strategies of Organizational Development

The major factors influencing organizational effectiveness and the quality of working life through the analysis of selected real-life organizations. The approach used views an organization from two different, although interrelated, perspectives - its technology and its social system. Through term projects, readings, lectures, and classroom exercises, students become familiar with both the concepts and the practical application of this "socio-technical system" approach.

* **(82) EMPLOYMENT (3 credits)**
OFFERED FALL ONLY

272-424X-81 Thursdays
PREREQUISITES:
1. Personnel Administration
2. Introductory Management Statistics

Reviews in sequence all aspects of the hiring and dehiring of employees. Topics covered will include manpower planning, recruiting, selection, placement orientation, retirement and dehiring. Each area will be covered from legal, technical and theoretical perspectives.

* **(83) HUMAN RESOURCE TRAINING AND DEVELOPMENT (3 credits)**
OFFERED WINTER ONLY

272-426Y-71 Wednesdays
PREREQUISITES:
1. Personnel Administration
2. Social Psychology

Includes discussion of planning, conceptualization, design, implementation and evaluation of training and career development programs. Will review the major techniques in each area. The training and development will be approached from a systems point of view.

* **(84) EVALUATION OF HEALTH AND SOCIAL SERVICES ORGANIZATIONS (3 credits)**
OFFERED WINTER ONLY

628-401Y-81 Thursdays
PREREQUISITE:
1. Health Care Organization
2. Introductory Management Statistics

The responsibility of agency management for the timely appraisal of activities. Topics include: program definition and quality of service, evaluation methods, problems and limitations of evaluation research, assessment of project feasibility, the distribution and operational uses of quality control information, internal and external points of view, politics of evaluation, relation to budgeting and to self-evaluation.

PSYCHOLOGY

▲ **(85) PSYCHOLOGICAL TESTS AND MEASUREMENT (3 credits)**

204-406
PREREQUISITE: Introduction to Psychological Statistics or equivalent

An introduction to the theory and practice of psychological and educational measurement. Special attention will be paid to the theoretical problems involved in the use of measurement techniques and statistics in psychology. A wide variety of tests will be discussed in the areas of clinical, social, educational, and personality psychology.

* Pending Senate Approval.

REAL ESTATE

(86) REAL ESTATE FINANCE (3 credits)
OFFERED FALL ONLY

278-485X-61 Tuesdays
PREREQUISITE: Finance I

Fundamentals of real estate finance from the viewpoint of a consumer as well as that of a manager involved in real estate. Second, the functions of a mortgage market are examined on an institutional and regional basis. Third, the implications of an efficient mortgage market are related to the housing market.

(87) REAL ESTATE VALUATION (3 credits)
OFFERED WINTER ONLY

278-487Y-61 Tuesdays
PREREQUISITE: Real Estate Finance

Methods of real estate appraisal. The practical relationship of appraisal to feasibility and market analysis is considered in detail. Procedures, practices and problems of assessment and expropriation are reviewed. The impact of the statistical methods on the appraisal profession are also examined.

* **(88) BUILDING CONSTRUCTION & COST ESTIMATING (3 credits)**
OFFERED FALL ONLY

628-207X-61 Tuesdays
628-207X-68 Tuesdays French Section
Fall only

An introductory course designed for students who wish to follow careers in one of the real property professions including Appraisal, Assessment, Brokerage and Property Management. The course material is designed to accept a student with no prior experience in building construction methods, materials and cost estimating. This

* Pending Senate Approval.

course will provide the student with a good foundation in the vocabulary of construction (residential), basic building materials, residential construction methods, residential design and utility and plans specifications. Utilizing this new knowledge, the student will apply it to cost estimating problems based on standard cost manuals designed for property appraisal work.

(89) REAL ESTATE INVESTMENT ANALYSIS (3 credits)
OFFERED WINTER ONLY

278-495Y-71 Wednesdays
PREREQUISITES:
1. Real Estate Mathematics and Finance
2. Finance I

Risk and return in real estate investment. Analysis of investment measurement techniques, financial combinations, ownership patterns and tax strategy are the avenues which are analyzed on a risk-return relationship. A computer model enables the student to simulate a variety of investment strategies.

* **(90) COÛT: PARAMÉTRIQUE, COMMERCIAL, INDUSTRIEL, INSTITUTIONNEL (3 crédits)**
OFFERED WINTER ONLY

628-302Y-51 Lundi
PRÉALABLE: Construction et estimation du coût des bâtiments

Application des techniques d'estimation des coûts aux édifices résidentiels, commerciaux, industriels et institutionnels, selon les normes et méthodes précisées aux tomes IV, IVA et V du Manuel d'évaluation de la province de Québec.
Ce cours n'est offert qu'en français.

SOCIAL WORK

▲ **(91) INDUSTRIAL SOCIAL WORK (3 credits)**

407-464

A seminar on social work practice in industrial settings. Analysis of conceptions of work; work related, personal and family problems, relationships between social agencies and the world or work, social service programs offered under industrial and trade union auspices.

TRANSPORTATION

(92) TRANSPORT POLICY (3 credits)

629-207Y-61 Tuesdays
PREREQUISITE: Transportation Economics

The purpose of the course is to give the student an appreciation of the major broad transport issues and policies facing Canada in the 1980's. The primary policy mechanisms of government regulation, subsidies, expansions, energy, incentives and technological change will be discussed. These discussions will focus on real life Canadian situations and will be supported by numerous readings often relating to the theory of the situations being presented.

* **(93) AIR TRANSPORT MANAGEMENT (3 credits)**

628-342 Day: T.B.A.
PREREQUISITES:
1. Transportation Economics
2. Transport. Policy
3. Seminar in Organizational Strategy
or
Appropriate Business Experience

Air Transport Management, historical background; anatomy of an airline; organization and planning; financial management and pricing; scheduling and fleet operations; air freight; measures of airline performance; traffic forecasting; airport management; aviation law; liability; role of government, ICAO; IATA: non-scheduled operators; current economic problems in aviation.

* **(94) ROAD TRANSPORTATION MANAGEMENT (3 credits)**

628-343 Day: T.B.A.
PREREQUISITES:
1. Transportation Economics
2. Transport. Policy
or
Appropriate Business Experience

The history of trucking and contemporary practice in this industry. Rate negotiations; tariffs, truck terminal functions; insurance coverage for vehicle and cargo; decision making in sales and marketing; freight flow analysis and balanced operations; warehouse planning; scheduling; dispatching for city and line-haul; operating authority; equipment purchasing policy; accounting systems (payable/receivables/interlining); computer applications; safety; claims; labour organization; personnel policy and practices.

* **(95) MARINE TRANSPORT MANAGEMENT (3 credits)**

628-344 Day: T.B.A.
PREREQUISITES:
1. Transportation Economics
2. Transport. Policy
or
Appropriate Business Experience

The impact of national and international shipping on Canadian trade and transportation, domestic and overseas. Containerization/inter-modality, ship/cargo, chartering, marine insurance, marine law, specialized ship carriers, decision, making in

* Pending Senate Approval.

relation to ship and cargo handling operations, costs and capital requirements for ships and fixed installations, the impact of technical and legislative developments concerningshipping, northern transportation, LNG'S, VLCC'S, and port administration in Canada and overseas.

* **(96) RAIL TRANSPORT MANAGEMENT (3 credits)**

628-345 Day: T.B.A.

The organization, development and operation of railroads. Topics include: analysis of past and future development; railroad structures and organizations; interacting factors affecting railroad operation; management decision processes and styles of management.

Equipment selection, operations, service practice, scheduling and traffic flow will be given detailed consideration.

9.11 CAREER DEVELOPMENT COURSES

The following courses may not be taken for credit.

ACCOUNTING

(97) FINANCIAL STATEMENT ANALYSIS OFFERED FALL ONLY

621-221X-51 Mondays
FEE: $150.
DURATION: 12 weeks (36 hours)
PREREQUISITE: Introduction to Financial Accounting

For those with responsibility for using financial statements (accountants, security and credit analysts, lending officers and investors). Interpretation of financial statements through the application of techniques of analysis and evaluation to problems in investment and lending. Linking qualitative and quantitative data in decision making. The relationship of accounting to financial analysis and the objectives of users of statements. Topics include: measurement of income, assets and liabilities, distortions and constraints in these measures; accounting for price changes, effects of price level changes; rating debt securities; analysis of capital structure; long term solvency; results of operations; external sources of data; audit function.

BUSINESS COMMUNICATIONS

(98) PUBLIC RELATIONS PRACTICE OFFERED FALL ONLY

628-221X-51 Mondays
DURATION: 12 weeks (36 hours)
FEE: $150.

*Pending Senate Approval.

Why and how business and other organizations seek the good will of general and specific "publics". How news handling, employee and investor communications, community relations and other aspects of a co-ordinated program fulfil a public relations policy. The course is designed both for students and practitioners seeking broader PR career knowledge and for executives who need an understanding of the public relations function. Presented in cooperation with the Canadian Public Relations Society.

This course is also offered in French with the title: GESTION DES RELATIONS PUBLIQUES.

(100) EFFECTIVE SPEAKING AND SPEECH PREPARATION

628-224X-71 Wednesdays
DURATION: 12 weeks (36 hours)
FEE: $150.
PREREQUISITE: A practical knowledge of English

For business and professional people, this course offers a workshop approach to developing and improving the speaking skills required in management positions. Through practice, observation and evaluation, class members learn how to organize and present their thoughts in a logical and persuasive manner, how to respond to questioning and how to assess audience reaction. Various speaking situations are covered, including the public platform, radio and TV interviews, conferences, seminars and group meetings.

(101) PUBLIC RELATIONS CASES OFFERED WINTER ONLY

628-321Y-51 Mondays
DURATION: 12 weeks (36 hours)
FEE: $150.
PREREQUISITE: PUBLIC RELATIONS PRACTICE

This course is designed to give the advanced student practical experience in identifying and resolving typical business communications problems, using the case method. A broad spectrum of cases is studied, covering such areas as relations with the public, customers, employees, government, the financial community and the many other public whose opinions and attitudes must be considered. Presented in cooperation with the Canadian Public Relations Society.

This course is also offered in French with the title: RELATIONS PUBLIQUES: ANALYSE DE CAS

ENGINEERING MANAGEMENT

(102) COST ENGINEERING CONCEPTS I OFFERED FALL ONLY

628-031X-61 Tuesdays
FEE: $195.

DURATION: 13 lectures of 3 hours
PREREQUISITE: Basic Engineering degree or equivalent experience in industry

Time value of money, interest rates, inflation deflation and industrial cost indices; Depreciation and resource depletion; Technical cost types and elements, full costs, relevant cost for decision making and responsibility accounting in an engineering environment; Product and process life cycle costing; Cost ratios and learning curves; Comparison of alternatives, evaluation of feasibility, range and point estimates of fixed and operating costs; Risk assessment: breakeven and sensitivity analysis, risk exposure; Conceptual, behavioural and measurement problems in evaluating project planning and performance; Decision audit.

(103) COST ENGINEERING CONCEPTS II
OFFERED WINTER ONLY

628-032Y-61 Tuesdays
DURATION: 13 lectures of 3 hours
FEE: $195.
PREREQUISITE: Cost Engineering Concepts I

Cost data sources and estimating techniques, refined operating and capital cost estimation; costing of products, plants, services and R and D projects; qualitative considerations – provisions of contingencies – effect of inflation and uncertainties; a value analysis – appraisal, the effect of pricing of key.

• **(104) PROJECT MANAGEMENT I**

628-027

An overview of the components comprising the disciplines within project management and how they fit together. Topics include: the role of project management in construction; project life cycle; methods of project delivery; duties of the project manager; activities in the phases of preconstruction; bidding and award; construction control; commissioning a model for planning and control; and case study.

• **(105) PROJECT MANAGEMENT II**

628-128
PREREQUISITE: Project Management I

The techniques employed by the project manager. Topics include: methods of project estimating; activities and project planning techniques; resource levelling and allocation; cost engineering; procurement; value engineering; quality assurance; safety; project finance and insurance; and infrastructure support.

INSURANCE

(106) GENERAL INSURANCE I

628-230-271 Wednesdays 6 – 8 p.m.
FEE: $250.
DURATION: 30 lectures (60 hours)

The law, theory and practice of insurance, policy construction and interpretation for all major classes of insurance including automobile, fire, crime, liability and life. This course will use the Insurance Brokers' Association textbook and is designed for entrants into the practice of insurance, but will also be helpful for non-professionals who desire a general understanding of insurance.

(107) GENERAL INSURANCE II

628-330-271 Wednesdays 6 – 8 p.m.
FEE: $250.
DURATION: 30 lectures (60 hours)
PREREQUISITE: General Insurance I

The classes of insurance covered in the preliminary course will be dealt with more extensively and in greater depth. The application of insurance knowledge and features risk analysis and design of an insurance program.

(108) RISK MANAGEMENT
OFFERED FALL ONLY

628-026X-71 Wednesdays
FEE: $195.
DURATION: 13 lectures of 3 hours

The structure of the risk management process; the field of general insurance from the point of view of managing the risk exposure of a business. Of interest to both sellers and buyers of general insurance contracts, topics include: formulation of policy on risk exposure, measuring risk exposure, probability analysis, product safety, employee safety; key personnel insurance, negligence; capital budgeting and risk management decision making.

The course will give credit in Subject 960 for students enrolled in the Insurance Institute of Canada Fellowship program and may also be taken by interested individuals. The subject matter is drawn from the risk management courses developed by the Insurance Institute of America with a Canadian commentary.

Offered in both the English and French languages; however, textbooks are available in English only.

(109) RISK CONTROL
OFFERED WINTER ONLY

628-028Y-71 Wednesdays
FEE: $195.
DURATION: 13 lectures of 3 hours
PREREQUISITE: Risk Management

Risk control and management techniques which minimize the losses striking the organization: avoiding loss exposures, preventing losses from occurring or reducing their severity, making losses more predictable, and transferring risks to other non-insurance organizations. Drawing on the guidelines for selecting techniques developed in Risk Management (628-026), this course describes when and to what extent each risk control technique should be employed, how each should be administered, and how each should be monitored for

(110) RISK FINANCING

628-030Y-71	Wednesdays
FEE:	$195.
DURATION:	13 lectures of 3 hours
PREREQUISITE:	Risk Control

The selection, administration, and monitoring of the methods by which an organization can obtain funds to finance the restoration of those losses which do befall it. Attention is directed primarily to self-insured risk retention (including retention through a captive insurer) and commercial insurance.

The financial and economic guidelines from Risk Management (628-026) are applied to such topics as setting the amount of self insured retention, negotiating admitted and non-admitted insurers, and co-ordinating self-insurance with commercial insurance.

Offered in both the English and French languages; however, textbooks are available in English only.

MANAGEMENT SCIENCE

(111) REMEDIAL MATHEMATICS

627-000X-71	Wednesdays
627-000X-78	Wednesdays French Section
FEE:	$70.
DURATION:	13 lectures of 3 hours

A remedial course strongly recommended along with College Algebra & Functions for those students who are required to take Mathematics of Finance, but who have never taken logarithms and progressions in intermediate or elementary algebra or who have forgotten them. The associative, distributive and commutative laws: fundamental operations; factoring and simplification of algebraic expressions; equations of the first degree in one and two unknowns; quadratic equations, indices, logarithms, progressions, simple graphs, linear interpolation. This course may not be taken for degree credit.

TRAVEL COUNSELLING

(112) INTRODUCTION TO TRAVEL COUNSELLING

628-015X-	
FEE:	T.B.A.
DURATION:	T.B.A.

For new employees working for a travel agency or for those interested in entering this field of work. World tourism and the complete travel service offered by an agency. Practical topics include: ticketing, documentation, geography, as applied to individuals and groups; air, steamship, train, car rentals, etc. form individual parts of the course. Guest lecturers will discuss specialized topics and problems related to travel.

This course may not be taken for degree credit.

EVENING COURSE OFFERINGS BY SUBJECT for courses that form part of a certificate program.

ACCOUNTING

(1) Introduction to Financial Accounting
(2) Introduction to Management Accounting
(3) Financial Accounting I
(4) Financial Accounting II
(5) Accounting Theory
(6) Financial Accounting III
(7) Management Acounting I
(8) Management Accounting II
(9) Management Accounting III
(10) Introduction to Auditing
(11) Operational Auditing
(12) External Auditing
(13) Taxation I
(14) Taxation II

BANKING MANAGEMENT

(15) Law and Banking Practice
(16) Banking Management

BUSINESS COMMUNICATIONS

(17) Communications Skill in Management

COUNSELLOR EDUCATION

(18) Principles of Helping Relationships
(19) Practicum in Interviewing Skills

ECONOMICS

(20) Macro Economics
(21) Micro Economics
(22) Transportation Economics
(23) Land Economics
(24) Managerial Economics

FINANCE

(25) Finance I
(26) Managerial Finance
(27) Investments and Portfolio Management
(28) Capital Markets and Institutions

GENERAL MANAGEMENT

(29) Independent Studies in Management
(30) Principles of Management

HEALTH CARE

(31) Health Care Organization
(32) Hospital Organization and Management
(33) Departmental Management in Health and Social Services

INDUSTRIAL RELATIONS

(34) Introduction to Industrial Relations
(35) Collective Bargaining
(36) Labour Law
(37) Human Resources in Industrial Society

INTERNATIONAL BUSINESS

(38) Introduction to International Business
(39) International Financial Management

LAW

(40) Business Law I
(41) Business Law II
(42) Land Law
(43) Transport Law and Regulations
(44) Legal Aspects of Health Care

MANAGEMENT INFORMATION SYSTEMS

(45) Management Information Systems
(46) Computer Based Information Systems
(47) Systems Analysis and Modelling.
(48) Business Programming Development
(49) Information Systems Design
(50) Information Systems Administration
(51) Advanced Topics – Computer Systems Applications
(52) Minicomputers, Microprocessors and their Applications
(53) Control and Verification of Computer Systems

MANAGEMENT POLICY

(54) Organizational Policy
(55) Seminar in Organizational Strategy
(56) Business in Society I

MANAGEMENT SCIENCE

(57) College Algebra and Functions
(58) Survey of Basic Mathematics I
(59) Survey of Basic Mathematics II
(60) Introductory Management Statistics
(61) Statistical Methods in Management
(62) Operations Research
(63) Production Management

MARKETING

(64) Marketing Management I
(65) Physical Distribution
(66) Marketing Management II
(67) Marketing Planning
(68) Marketing Research
(69) Consumer Behaviour
(70) Advertising Management
(71) Sales Management
(72) Industrial Marketing
(73) Retail Management

ORGANIZATIONAL BEHAVIOUR

(74) Social Psychology
(75) Introduction to Organizational Behaviour
(76) Group Dynamics and Interpersonal Relations
(77) Strategies of Organizational Development
(78) Creativity, Innovation and Management
(79) Personnel Administration
(80) Compensation Management
(81) Cases and Issues in Personnel
(82) Employment
(83) Human Resource Training and Development
(84) Evaluation of Health and Social Services C.O. organizations

PSYCHOLOGY

(85) Psychological Tests and Measurement

REAL ESTATE

(86) Real Estate Finance
(87) Real Estate Valuation
(88) Building Construction and Cost Estimating
(89) Real Estate Investment Analysis
(90) Coût: Paramétrique, Commercial, Industriel, Institutionnel

SOCIAL WORK

(91) Industrial Social Work

TRANSPORTATION

(92) Transport Policy
(93) Air Transport Management
(94) Road Transportation Management
(95) Marine Transport Management
(96) Rail Transport Management

CAREER DEVELOPMENT COURSES

ACCOUNTING

(97) Financial Statement Analysis

BUSINESS COMMUNICATIONS

(98) Public Relations Practice
(99) Internal Communications Management
(100) Effective Speaking and Speech Preparation
(101) Public Relations Cases

ENGINEERING MANAGEMENT

(102) Cost Engineering Concepts I
(103) Cost Engineering Concepts II
(104) Project Management I
(105) Project Management II

INSURANCE

(106) General Insurance I
(107) General Insurance II
(108) Risk Management
(109) Risk Control
(110) Risk Financing

MANAGEMENT SCIENCE

(111) Remedial Mathematics

TRAVEL COUNSELLING

(112) Introduction to Travel Counselling

COURSE LIST BY EVENING AND TIME (For Fall Term Only)

Monday

(7) Management Accounting I
(8) Management Accounting II
(13) Taxation I
(14) Taxation II
(15) Law and Banking Practice
(38) Introduction to International Business
(45) Management Information Systems
(48) Business Programming Development
(54) Organizational Policy
(62) Operations Research
(66) Marketing Management II
(70) Advertising Management
(74) Social Psychology
(97) Financial Statement Analysis
(98) Public Relations Practice

Tuesday

(1) Introduction to Financial Accounting
(3) Financial Accounting I
(4) Financial Accounting II
(5) Accounting Theory
(6) Financial Accounting III (C.G.A.)
(6) Financial Accounting III (R.I.A.)
(20) Macro Economics
(22) Transportation Economics
(30) Principles of Management
(34) Introduction to Industrial Relations
(49) Information Systems Design
(68) Marketing Research
(86) Real Estate Finance
(88) Building Construction and Cost Estimating
(99) Internal Communications Management
(102) Cost Engineering Concepts I

Wednesday

(40) Business Law I
(41) Business Law II
(46) Computer Based Information Systems
(47) Systems Analysis and Modelling
(55) Seminar in Organizational Strategy
(57) College Algebra and Functions
(60) Introductory Management Statistics
(64) Marketing Management I
(69) Consumer Behaviour
(75) Introduction to Organizational Behaviour
(100) Effective Speaking and Speech Preparation
(108) Risk Management
(111) Remedial Mathematics

Thursday

(10) Introduction to Auditing
(17) Communications Skill in Management
(21) Micro Economics
(23) Land Economics
(25) Finance I
(32) Hospital Organization and Management
(58) Survey of Basic Mathematics I
(76) Group Dynamics and Interpersonal Relations
(79) Personnel Administration
(82) Employment

COURSE LIST BY EVENING AND TIME (For Winter Term Only)

Monday

(2) Introduction to Management Accounting
(7) Management Accounting I
(8) Management Accounting II
(9) Management Accounting III
(13) Taxation I
(14) Taxation II
(24) Managerial Economics
(39) International Financial Management
(45) Management Information Systems
(51) Advanced Topics – Computer Systems Applications
(54) Organizational Policy
(67) Marketing Planning
(72) Industrial Marketing
(74) Social Psychology
(90) Coût: Paramétrique, Commercial, Industriel, Institutionnel
(101) Public Relations Cases

Tuesday

(1) Introduction to Financial Accounting
(3) Financial Accounting I
(4) Financial Accounting II
(5) Accounting Theory
(6) Financial Accounting III (C.G.A.)

(6) Financial Accounting III (R.I.A.)
(20) Macro Economics
(30) Principles of Management
(35) Collective Bargaining
(42) Land Law
(44) Legal Aspects of Health Care
(63) Production Management
(87) Real Estate Evaluation
(92) Transport Policy
(103) Cost Engineering Concepts II

Wednesday

(11) Operational Auditing
(12) External Auditing
(26) Managerial Finance
(33) Departmental Management in Health and Social Services
(40) Business Law I
(41) Business Law II
(46) Computer Based Information Systems
(53) Control and Verification of Computer Systems
(57) College Algebra and Functions
(64) Marketing Management I
(65) Physical Distribution
(73) Retail Management
(75) Introduction to Organizational Behaviour
(83) Human Resource Training and Development
(89) Real Estate Investment Analysis
(100) Effective Speaking and Speech Preparation
(109) Risk Control

Thursday

(17) Communications Skill in Management
(21) Micro Economics
(25) Finance I
(31) Health Care Organization
(43) Transport Law and Regulations
(50) Information Systems Administration
(59) Survey of Basic Mathematics II
(60) Introductory Management Statistics
(61) Statistical Methods in Management
(71) Sales Management
(80) Compensation Management
(84) Evaluation of Health and Social Services Organizations

COURSES AVAILABLE IN THE FRENCH LANGUAGE (For Fall Term Only)

(1) Introduction to Financial Accounting
(17) Communications Skill in Management
(20) Macro Economics
(21) Micro Economics
(23) Land Economics
(30) Principles of Management
(40) Business Law I
(45) Management Information Systems
(54) Organizational Policy
(57) College Algebra and Functions
(60) Introductory Management Statistics
(64) Marketing Management I
(74) Social Psychology
(75) Introduction to Organizational Behaviour
(88) Building Construction and Cost Estimating
(98) Public Relations Practice
(111) Remedial Mathematics

COURSES AVAILABLE IN THE FRENCH LANGUAGE (For Winter Term Only)

(1) Introduction to Financial Accounting
(17) Communications Skill in Management
(20) Macro Economics
(21) Micro Economics
(25) Finance I
(30) Principles of Management
(40) Business Law I
(41) Business Law II
(42) Land Law
(54) Organizational Policy
(57) College Algebra and Functions
(64) Marketing Management I
(74) Social Psychology
(75) Introduction to Organizational Behaviour
(90) Coût: Paramétrique, Commercial, Industriel, Institutionnel
(101) Public Relations Cases
(111) Remedial Mathematics

10 MANAGEMENT GRADUATE

Professor W.H. Ellis
Director

Rosa Greco-Pepe
Administrative Assistant

Mary Rubiano-Perri
Admissions

392-6700

10.1 INTRODUCTION

The Management Graduate Department of the Centre for Continuing Education, in cooperation with the Faculty of Management, offers courses leading to the Diploma in Management, the first year of the Masters Program in Business Administration (M.B.A.) and the Diploma in Management (Tourism).

These programs are designed to meet the demand for the development of management skills – theory and application – of university graduates who are in the work force and who wish to continue their studies on a part-time basis.

10.2 MBA I PROGRAM FOR PART-TIME STUDENTS

10.2.1 ADMISSION REQUIREMENTS

There are four routes into the McGill Part-time Program:

a) **Direct Admission:** Applicants having fulfilled the admission requirements may be admitted directly to the MBA Part-time Program. These procedures are similar to the day program admissions. The entrance requirements of the MBA Program are as follows:

i. an undergraduate degree from an approved university, or equivalent, as approved by the McGill Faculty of Graduate Studies and Research;
ii. a 3.0 Grade Point Average (out of 4.0), or a "B" average (70%);
iii. a Graduate Management Admission Test (GMAT) score of 500 or more;
iv. a Test of English as a Foreign Language (TOEFL) score of 550 or more for foreign students whose first language is not English;
v. two letters of reference.

b) **Deferred Admission:** Applicants failing to meet all of the above criteria are requested to apply to the Diploma Program and complete five courses*, which are specified by the MBA Part-time Program. Upon completion of these courses with a 70% average, with no failures, and in keeping with the conditions specified in the initial contract of acceptance made, the student may be admitted to the MBA I Part-time Program.

c) **Diploma/MBA:** Applicants enrol in the Diploma Program and take five prespecified courses as indicated in the MBA I Sequence. Upon completion of these five courses*, with an average of 70% and no failures, students may apply to the MBA Part-time Program and thus enter the MBA I part-way through.

Students should not deviate from the five* prespecified courses, nor the sequence. Credits and exemptions must be approved in advance.

d) **Direct Admission to MBA II:** Upon completion of the MBA I core courses, with an average of 70% students may apply for Direct Entry to MBA II. Again, these courses must be completed according to the MBA I Sequence. Exemptions and Credits must be approved in advance according to the MBA Program criteria, if the Diploma Year is to be used inlieu of the MBA I.

Regardless of which route is followed, all applicants must fulfil the entrance requirements of the MBA Part-time Program as outlined in items i – v above.

Students should note that the entrance criteria (items a through d) are generally viewed as the minimum entrance criteria before applicants are seriously considered by the Admissions Committee. The large number of applicants to the M.B.A. Program and the desire to keep the program at a moderate size means that merely meeting the minimum criteria does not guarantee acceptance.

The student must complete the MBA program within six years from first registering in the MBA program or in the Diploma in Management program. Students who fail to meet the requirements for graduation within the six year limit, will not be permitted to graduate and will be dismissed from the program.

* or six if the Survey of Basic Mathematics is required.

10.2.2 ADMISSION PROCEDURES

Admission to the MBA part-time program may be made twice a year. Completed application forms and all supporting documents must be received by the following dates:

June 15th for admission in September, and
November 15th for admission in January.

All applications should be sent to:
The McGill MBA Part-time Program
Admissions Officer
Faculty of Management
McGill University
1001 Sherbrooke Street West,
Montreal, Québec H3A 1G5
Telephone: 392-4336

10.2.3 ACADEMIC REQUIREMENTS OF THE MBA PART-TIME PROGRAM

MBA I Part-Time

First Five (or six)

Survey of Basic Mathematics OR
The Test for College Entrance Mathematics

1. Accounting – A Management Approach
2. Basic Management Statisticcs
3. Economic Analysis of Business
4. Management Information Systems
5. Marketing Management I

Second Five

6. Finance I
7. Economic Environment of the Firm
8. Introduction to Modelling Methods
9. Organizational Behaviour
10. Organizational Theory and Design

OR

Introduction to International Business

Please note that because of the nature of the program, students will NOT be permitted to register for more than two(2) courses per term.

These ten or eleven MBA I courses must be taken in a prescribed sequence in order to permit some degree of dovetailing and integration of material through the first year. The first five (or six) courses must be completed prior to beginning the last five. More information on sequencing is available in literature from the MBA Office.

In the case of exemptions, where MBA II courses are taken as substitutes for MBA I, these advanced courses must be done only after the remaining MBA I courses have been completed.

10.3 MBA II PROGRAM FOR PART-TIME STUDENTS

Students may qualify for entry into the second year of the MBA Program upon successful completion of the first year with an average of at least 70%.

The MBA II Program consists of two full-year required courses:

1. Management Policy
2. Skill Development

These courses must be taken concurrently.

The elective courses consist of advanced topics in the following areas:

Accounting and Finance
Finance
General Management
Human Resources Management
Industrial Relations
Institutional Finance and Real Estate
International Business/Finance
International Business/Management
International Business/Marketing
Management Information Systems
Management Policy
Management Science
Managerial Economics
Marketing
Public Sector Management
Regulated Industry Management
Small Business

Details on the courses in the second year are provided in a package of material mailed to all accepted MBA II Part-Time Students.

Students may choose either eight elective courses or six elective courses and an independent research project. The elective courses consist of thirteen lectures of three hours each. All courses are held once a week only.

Note: Students who wish to switch from the Part-time to Full-time MBA Program must do so at the end of the MBA I Program. Students with an excellent academic record in the Part-time MBA I or Diploma, may be permitted to carry one MBA I course into MBA II. However, successful completion of MBA I in the Part-time Program does not guarantee entry to the Full-time Program.

Independent Research Project

This project is designed to familiarize students with the process and the problems of independent research. The student is given considerable freedom in choosing research topics. The study may be a normative one or a descriptive one. It may be based on primary data or secondary data. In this project, students get the opportunity to work on a one-to-one basis with a Faculty member for the entire academic year. Members of the Montreal business community act as resource consultants when this appears desirable.

10.4 DIPLOMA IN MANAGEMENT PROGRAM

(In cooperation with the Faculty of Management)

The program is designed to provide conceptual and applied training in management to those graduates whose work is primarily administrative and managerial and who wish to continue their studies on a part-time basis.

10.4.1 ADMISSION REQUIREMENTS AND PROCEDURES

1) **Application for Admission**

Students wishing to follow a Diploma Program must complete an application form. For details of the procedure to be followed contact the department. Completed application forms and all supporting documents must be received by the following dates:

June 15th for admission in September;
October 15th for admission in January;
February 15th for admission in Summer.

Students who do not register within one year of date of acceptance will be required to reapply.

Please note that students can only be admitted to the program on a part-time basis.

2) Applicants must have a university degree with a G.P.A. of 2.5 from an approved university

(exception indicated in next paragraph). Arrangements must be made for an official transcript to be mailed to the Associate Director, Management - Graduate, Diploma Programs. This also applies to McGill graduates. This procedure must be completed by the above deadlines as ALL students registering in the Diploma in Management Program must be officially accepted to the Program before they are permitted to register.

3) Students who do not have a university degree but have a Canadian CA, are Registered Professional Engineers of Québec, or hold the Higher National Diploma (U.K.) may be admitted on a provisional basis. After completing five prescribed courses their records will be reviewed and those who have distinguished themselves may be given permission to pursue the program as regular students.

4) **Test for College Entrance Mathematics**

ALL students entering the Diploma in Management Program must demonstrate an adequate knowledge of college entrance mathematics by successfully completing either;

1) Survey of Basic Mathematics 277-674 or
2) the Test for College Entrance Mathematics

Students failing the Test are NOT permitted to repeat it but must enroll in Survey of Basic Mathematics and successfully complete it before registering for Basic Management Statistics, Introduction to Modelling Methods and Economic Analysis of Business.

Students who wish to sit the Test on any of the given dates mentioned below may obtain a sample test, supplemental notes and an application form from the Centre upon request. There will be a $5.00 fee (non-refundable) for the Mathematics Test.

Thursday 5 August 1982
Thursday 11 November 1982
Thursday 7 April 1983

Students who have not completed the Test for College Entrance Mathematics or the course Survey of Basic Mathematics will not be eligible to receive the Diploma.

5) **Language Admission Requirement**

Applicants who are not Canadian citizens and whose native language is not English must submit evidence of their facility in English before they may be considered for admission. Acceptable evidence would be the successful completion of one of the following:

i) a University program in English
OR ii) The G.C.E. Ordinary & Advanced Level Examinations in English Literature or Composition.
OR iii) The University of Michigan English Language Test
OR iv) The Test of English as a Foreign Language (TOEFL)
OR v) The McGill Placement Test.

Arrangements for the McGill Placement Test may be made through the Languages Department at the Centre for Continuing Education, 392-8301.

10.4.2 ADVANCED STANDING

CREDITS/EXEMPTIONS

Students who have completed post-graduate level courses at a recognized university may apply for transfer of credits. An official description of the courses taken elsewhere and the marks obtained must be submitted before completing the first year of the program.

Diploma students who have completed some of the required courses at the undergraduate level at McGill or elsewhere may substitute elective courses. In requesting exemption from required courses, the student must submit an official description of the content of the course he regards as equivalent and a transcript of his marks.

MBA students are advised that in order to be granted exemptions they must have completed at least two or preferably 3 courses in the specified area with a B average. If an exemption is granted, the student must substitute an MBA II elective in the same area.

Students who have been granted credits and/or exemptions are not permitted to register for the courses for which they have been granted credits and/or exemptions.

A maximum of four credits may be granted for post-graduate courses taken outside McGill. Students are required, therefore, to complete the six remaining courses at McGill in order to be eligible for the Diploma. No credits or exemptions will be granted for courses taken prior to 1975.

10.4.3 DIPLOMA IN MANAGEMENT(GENERAL)

CORE COURSES

Students wishing to qualify for the Diploma in Management must complete at least one course in each of the five groups listed below and the Test for College Entrance Mathematics or the Survey of Basic Mathematics course. In addition, a student MUST be officially admitted to the program before being eligible for the Diploma.

A	3)	Basic Management Statistics
	9)	Introduction to Modelling Methods
B	2)	Accounting-A Management Approach
	7)	Finance I
C	8)	Economic Environment of the Firm
	4)	Economic Analysis of Business
D	10)	Organizational Behaviour
	11)	Organizational Theory and Design

E
5) Management Information Systems
6) Marketing Management I

All Diploma candidates must take, in addition to the above five required "core" courses, five electives either from the remaining core or from the list below:

12) Introduction to International Business**
13) Agrimarketing**
14) Agribusiness Management**
15) Agricultural Commodity Trading**
16) Investment Analysis
17) Personnel and Industrial Relations
18) Geography of Tourism
19) Hotel, Motel and Restaurant Management
20) Management Applications in Tourism
21) Resort Area Development
22) Sociology of Tourism
23) Travel Agency Management
24) Management of Tour Logistics

Students may be permitted by the Associate Director to choose other electives from the graduate programs in Continuing Education.

Students wishing to follow the MBA Program should not choose any courses from the list of electives from 16 through 24.

**M.B.A. II Electives

10.5 DIPLOMA IN MANAGEMENT (TOURISM)

This Diploma in Management Program will enable qualified university graduates to pursue studies on a part-time basis, in the field of tourism. It will provide a career opportunity for individuals who aspire to managerial positions in a rapidly growing industry.

10.5.1 ADMISSION REQUIREMENTS AND PROCEDURES

The Admission Requirements and Procedures are the same as for the Diploma in Management (General). Tourism students are not required to take the Test for College Entrance Mathematics.

10.5.2 PROGRAM REQUIREMENTS

Students wishing to qualify for the Diploma in Management (Tourism) must complete a total of ten courses, seven of which are "core" courses with three being selected from the group of electives.

CORE COURSES

Accounting - A Management Approach
Finance I
Economic Environment of the Firm
Marketing Management I
Geography of Tourism (Winter)
Sociology of Tourism (Fall)
Management Applications in Tourism (Winter)

The first four courses are offered as part of the Diploma in Management (MBA I) Program.

ELECTIVE COURSES

Hotel, Motel and Restaurant Management (Winter)
Resort Area Development (Winter)
Travel Agency Management (Fall)
Management of Tour Logistics (Fall)
Management Information Systems (Fall & Winter)

10.6 ACADEMIC REGULATIONS

(1) Students must obtain a mark of not less than 65% in each course. Candidates are permitted to repeat any course only once. No candidate who has failed more than three courses on the first attempt will be granted the Diploma, nor will be permitted to register for any further Diploma courses. These regulations apply to all Graduate Diploma Programs.
(2) Because of the nature of the program, students will NOT be permitted to register for more than two (2) courses per term. Those who wish to take more than two (2) courses must submit their requests in writing to the Program Director six (6) weeks prior to registration.
(3) The Diploma may be obtained in two years but the student is advised to spread the work over a period not exceeding four (4) years.

10.7 COUNSELLING

Counselling is available by appointment. There will be no counselling during the registration period.

10.8 PROGRAM APPROVAL FORM

In order to ensure proper sequencing of courses ALL students must submit a Program Approval Form before each term. These forms are available prior to registration and must be completed and submitted to the Department for approval.

10.9 EXAMINATIONS

An examination is held at the end of each course unless specifically exempted. The Student Card of Admission must be presented at all examinations. Students will receive written confirmation of their examination or course results after each term. As the results of each course become

available they will be posted on the Notice Board at the Centre by STUDENT NUMBER. Results cannot be obtained by telephone.

Fall Term Examinations – 8 December to 23 December 1982
Winter Term Examinations – 11 April to 23 April 1983

Students should not make any other commitments during this period.
Vacation plans do not constitute valid grounds for the deferral of examinations.

10.10 GRADING SYSTEM

1. The Centre uses the grading system common to the University. The grading system is indicated in section 2.9.3 of the General Information.

10.11 REREADS

Students may request a verification of marks. This ensures that all questions have been marked, calculations carried out correctly and class work adequately counted toward the final evaluation.

If dissatisfied, a student may also request a formal reread of the final examination. The reread request form together with a cheque for $25.00 must be completed within 10 working days of the posting of the final mark.

Students are eligible to receive a refund if the letter grade is raised or if the mark is changed from a fail to a pass. The mark resulting from the reread becomes the official mark for the course.

10.12 SUPPLEMENTALS

To qualify for supplemental privileges, students must first write the final examination in the course and obtain at least 45%. Candidates who do not pass the supplemental examination will be required to repeat the course. Students must write their supplemental at the next examination period where the appropriate examination is offered or forfeit their supplemental privilege.

Students wishing to apply for a supplemental may do so in writing or in person at the Centre at least three weeks prior to the examination period. There is a charge of $20.00 for each supplemental payable to McGill University.

Date of Final	Date of Supplemental
Juen 1982	August 1982
August 1982	December 1982
December 1982	April 1983
April 1983	June 1983

Those students granted deferrals must also write at the next examination period as stated above.

10.13 CONVOCATION

Candidates who expect to receive the Diploma at Spring Convocation are required to complete application forms, available at the Centre for Continuing Education. The completed forms must reach the Centre by 15 March.

Candidates who expect to receive the Diploma at Fall Convocation must return the completed forms to the Centre by 15 August.

Students who may not meet the requirements by the specified dates, may be eligible to graduate at a subsequent convocation. Another application form, however, is required for submission to the Centre by the dates given above.

Please note that students must receive their Diploma in Management BEFORE their M.B.A.

10.14 NON CANADIAN STUDENTS

The Diploma programs are designed to be followed on a part-time basis and students may not be accepted to attend courses full-time. Foreign students are strongly advised to clear their status through the immigration department before applying to the program.

There is no financial aid for students registered in the Diploma or MBA Part-time Program. Foreign students with a student visa only, are not permitted to take employment in Canada. Foreign students are subject to additional fees. For further details request the "Fee Information Sheet" at the time of registration and see also the General Information Section 2.11.2.

10.15 LIBRARIES

Full library privileges are available to all students registered in the Diploma in Management Program at the following locations:

1) Howard Ross Library of Management
Samuel Bronfman Building
1001 Sherbrooke Street West

2) McLennan Library
McGill Campus

Final examination results will be withheld for all students with outstanding library fines.

For further information see Section 2.12.3 of the General Information.

10.16 REGISTRATION

Registration is on a first come first served basis but students should be aware that priority will be given to those students, returning and new, who have been officially admitted to programs.

Graduate and undergraduate students taking evening courses for credit are reminded that they MUST REGISTER BOTH WITH THEIR FACULTY

AND THE CENTRE FOR CONTINUING EDUCATION.
Refer to Section 2.4 of the General Information for registration dates and time.
Please note that our office will be closed from 9:00 a.m. to 1:00 p.m. during the official registration period.

10.17 SUMMER PROGRAM

The ten MBA I core courses will be offered during the summer. The first session will be held from May to June, the second session from May to August and a third session from July to August. This factor should be kept in mind by students who wish to plan a program that would allow them to complete the Diploma Program as expeditiously as possible.

10.18 TIMETABLE

A listing of instructors, books, buildings and room numbers will be distributed at the time of registration and will be posted at the Centre and on the Continuing Education noticeboards in each major building on the campus. Room numbers will not be given over the telephone.

10.19 TUITION FEES

Students in the MBA I/Diploma Program pay tuition fees at the rate of $19 per credit (i.e. $57 per course). Foreign students are subject to additional fees. For further details request the "Fee Information Sheet" at the time of registration.

10.20 COURSE DESCRIPTIONS

Unless otherwise indicated, all courses are offered once a week for 13 weeks (39 hours) from 6 - 9 p.m. beginning the week of 6 September and 10 January. The fee for each course is $57.00.

(1) SURVEY OF BASIC MATHEMATICS

277-674X-71 Wednesdays

The first part of the course will be spent in an intensive review of basic mathematics including algebra, graphs, functions and logarithms. The last part of the course will introduce the student to calculus including limits, functions of one variable, differentiation, integration and applications; and to matrix algebra including determinants and solutions of simultaneous linear equations. The material covered in this course will be adequate to enable students to follow the usual mathematical applications in business, economics, statistics and operations research.

(2) ACCOUNTING - A MANAGEMENT APPROACH

271-611X-51/ 2	Mondays
271-611X-61	Tuesdays
271-611X-62	West Island Tuesdays 7 - 10 p.m.
271-611X-71	Wednesdays
271-611X-81	Thursdays
271-611X-91	Fridays

Focuses on the internal use of accounting data by management for planning and control purposes and in the decision-making process. Covered are the basic concepts of financial accounting, the analysis and interpretation of financial statements, cost and control concepts, budgeting and the measurement of performance.

(3) BASIC MANAGEMENT STATISTICS

277-613X-51/52	Mondays
277-613X-71/2	Wednesdays
277-613X-81	Thursdays
277-613X-91	Fridays

PREREQUISITE: College-entrance mathematics or Survey of Basic Mathematics

Topics covered include: descriptive statistical analysis, common probability distributions (binominal, Poisson, normal), sampling procedures, sampling distributions, estimation, hypothesis testing, distribution-free procedures (tests of goodness of fit and independence), simple and multiple regression, correlation, one-way analysis of variance, classical time series analysis, Bayesian probability analysis. The course stresses the use of computer programs as an aid in statistical analysis.

(4) ECONOMIC ANALYSIS OF BUSINESS

279-692X-51	Mondays
279-692X-61	Tuesdays
279-692X-71	Wednesdays
279-692X-81	Thursdays
279-692X-91	Fridays

PREREQUISITE: Basic Management Statistics

Demonstrates the applications of economic theory and methodology in solving business problems. The following topics are discussed in some detail: demand, production, cost analysis, pricing, growth, concentration, profitability, and resource allocation of the firm. Marketing and sales forecasting techniques are also introduced briefly, and attention is given to opportunities for the application of incremental analysis.

(5) MANAGEMENT INFORMATION SYSTEMS (formerly Data Processing and Computers)

273-631X-51	Mondays
273-631X-61	Tuesdays

273-631X-71	Wednesdays
273-631X-72	Wednesdays
273-631X-81	Thursdays
273-631X-91	Fridays

Covers a variety of topics including computer concepts, programming systems, time-sharing, file organization and modern applications of the computer. Instruction will be given in the use of one or more programming languages and students will be assigned problems involving actual use of the computer.

(6) MARKETING MANAGEMENT I

275-651X-51	Mondays
275-651X-61	Tuesdays
275-651X-81	Thursdays
275-651X-91	Fridays

PREREQUISITE: Accounting – A Management Approach

A combination of lectures, and case studies involving team-work will be used. Lectures and text material will cover the marketing concept, law, buyer, behaviour, product-policy, advertising, pricing, distribution, research, and marketing planning. Canadian content will be used where appropriate. Case studies at weekly intervals will provide opportunities for involvement in problem-solving.

(7) FINANCE I

274-641X-51	Mondays
274-641X-61	Tuesdays
274-641X-71	Wednesdays
274-641X-81	Thursdays

PREREQUISITE: Accounting – A Management Approach

An introduction to financial management and the role of finance, both within the firm and the economy as a whole. The institutional framework of the firm is discussed, including legal forms, taxes, financing instruments and the capital markets. An introduction to the analytics of finance is presented including the pricing of financial instruments, simple models of capital market equilibrium, the financial structure of the firm, cost of capital, dividend policy, investment criteria for new capital spending proposals, and working capital management.

(8) ECONOMIC ENVIRONMENT OF THE FIRM

279-691X-51	Mondays
279-691X-61	Tuesdays
279-691X-71	Wednesdays
279-691X-81	Thursdays

PREREQUISITE: Basic Management Statistics

Examines the main macro-economic mechanisms, i.e. income determination and the multiplier theory as well as fiscal policy; the level of investment, the demand for money and the rate of interest as well as the Canadian banking system and deposit creation; the general equilibrium of product and money markets, and monetary and fiscal policies; the dynamics of investment, the employment sector, and the price level and inflation; the balance of payments and international trade as well as methods of dealing with balance-of-payments disequilibria.

(9) INTRODUCTION TO MODELLING METHODS

277-612X-51	Mondays
277-612X-61	Tuesdays
277-612X-91	Fridays

PREREQUISITE: College entrance mathematics or Survey of Basic Mathematics and Basic Management Statistics

Topics covered include: Introduction to Decision Analysis and Risk Attitudes, Inventory Control, Elementary Queueing Models, Simulation, Linear Programming Models and Extensions. The course stresses the formulation of problems and their solution by standard methods or computer packages.

(10) ORGANIZATIONAL BEHAVIOUR

272-621X-51	Mondays
272-621X-71	Wednesdays
272-621X-81	Thursdays

The implications for management and the essential concepts of social psychology such as motivation, perception, attitude change and organization, group and organizational dynamics will be the major emphasis of the course. Classroom discussion and student participation is encouraged.

(11) ORGANIZATIONAL THEORY AND DESIGN

272-623X-51	Mondays
272-623X-61	Tuesdays

PREREQUISITE: Organizational Behaviour

Aimed at studying how organizations are designed. The focus is on the relationship between the nature of the external environment of the organization, the technology it uses, and the management style, the goals, the organizational structure, the behaviour of individuals and groups in the organization, and its performance. A systems view is adopted. Implications for effective design of organizations are drawn.

(12) INTRODUCTION TO INTERNATIONAL BUSINESS

278-686X-51	Mondays
278-686X-61	Tuesdays
278-686X-71	Wednesdays

PREREQUISITE: Economic Analysis of Business 279-692

An introduction to the expanded world of the international businessman. Economic foundations of international trade and investment. The international trade, finance and regulatory frameworks. Relations between international companies and nation-states, including costs and benefits of foreign investment and alternative controls and responses. Effects of local environmental characteristics (educational, sociological, economic, legal, political) on the operations of multinational enterprises.

(13) AGRIMARKETING
(offered September only)

334-640X-81 Thursdays

Deals with agriculture and food marketing, management, and policy. The course will include detailed study of marketing functions, commodity marketing, retail and food service marketing encompassing the total Canadian agriculture and food system from producer to consumer.

(14) AGRIBUSINESS MANAGEMENT
(offered January only)

334-650Y-81 Thursdays

A course in management and agricultural business dealing with the agribusiness firm engaged in agricultural production and marketing and related farm supply business. The focus of the course is on agribusiness organization, operation, financial management and agribusiness policy in today's complex and changing international environment.

(15) AGRICULTURAL COMMODITY TRADING
(not offered in the 1982/83 session)

334-660Y-71 Wednesdays

Deals with domestic and international commodity market operations in the world today. Emphasis is placed on futures markets as most free market commodity transactions are either directly related to current futures exchanges or utilize the basic concepts that futures market are based upon. Non-agricultural commodities will occasionally be used to help explain some market forces.

(16) INVESTMENT ANALYSIS

606-530X-51 Mondays

Deals with security analysis and investment techniques, covering the different types and classes of securities. The sources of information, methods of compiling statistics, and assessment of comparative values are discussed, together with portflio objectives and differing philosophies of investment management. Broad economic trends and international political climates affecting security values are analysed.

(17) PERSONNEL AND INDUSTRIAL RELATIONS
(offered January only)

606-540Y-71 Wednesdays

Concerned with the general area of industrial relations, which includes an examination of the personnel function in modern industry. The use of behavioural science in industry will be discussed and analysed. Trade unionism and its functiosn in the United States and Canada will be examined as well as the nature of industrial conflict and the role of the state in law and dispute settlement machinery.

(18) GEOGRAPHY OF TOURISM
(offered January only)

608-530Y-51 Mondays

The contribution of geography to the description, explanation and interpretation of tourism and recreation, with special attention to spatial patterns, – local, national and international; to the organization and functioning of the international tourist system; and to local and regional impacts – ecological, cultural, social, economic and political.

(19) HOTEL, MOTEL AND RESTAURANT MANAGEMENT (offered January only)

608-540Y-81 Thursdays

The organization of hotel operations, departmental breakdown and responsibilities of hotels and motels are covered along with the fiscal aspects of management. Emphasis will be placed on the functions of organization, supervision, and human relationships. Accounting – A Management Approach or the equivalent would be useful background for this course.

(20) MANAGEMENT APPLICATIONS IN TOURISM (offered January only)

608-510Y-71 Wednesdays
PREREQUISITE: Accounting – A Management Approach

The principles and philosophy of tourism development will be covered with emphasis on financial, organizational, and decision-making theories as they relate to management. The impact of cultural differences on business organizations will be an integral part of the course.

(21) RESORT AREA DEVELOPMENT
(offered January only)

608-560Y-61 Tuesdays

A comprehensive examination will be made of the interrelationships of the marketing, financial

and physical aspects of tourist destination development within a region. A management approach will be emphasized in dealing with the development of tourist centres and resort areas. Accounting - A Management Approach or the equivalent would be useful background for this course.

(22) SOCIOLOGY OF TOURISM
(offered September only)

608-535X-51 Mondays

In order to gain a better understanding of tourism as a social phenomenon, the nature of the tourist industry and its effects on the host communities will be studied. The first part of the course will focus on the structure of the industry and the nature of the tourist. Such aspects as tourism organization and components, tourist motivation and the guest/host relationship will be discussed. The second part of the course will consider the effects of tourism on host communities. Emphasis will be placed on those effects both economic and social in nature.

(23) TRAVEL AGENCY MANAGEMENT
(offered September only)

608-570X-61 Tuesdays

Deals with the fundamental management principles for competent, effective and profitable travel agency operations. Among the topics covered will be office organization, financial administration, employee development, and performance evaluation. Accounting - A Management Approach or the equivalent would be useful background for this course.

(24) MANAGEMENT OF TOUR LOGISTICS
(offered September only)

608-580X-71 Wednesdays
PREREQUISITE: Accounting - A Management Approach 271-611

The application of modern logistics theory to the management functions of planning, organizing, controlling and directing of tours. Will emphasize a systems approach, introducing the concept of the interrelationship among the traditional functions of logistics and management to this particular subject.

10.21 COURSE LIST BY EVENING AND TIME:

Mondays 6 – 9 p.m.

(2) Accounting - A Management Approach
(3) Basic Management Statistics
(4) Economic Analysis of Business
(5) Management Information Systems
(6) Marketing Management I
(7) Finance I
(8) Economic Environment of the Firm
(9) Introduction to Modelling Methods
(10) Organizational Behaviour
(11) Organizational Theory and Design
(12) Introduction to International Business
(16) Investment Analysis
(18) Geography of Tourism (January)
(22) Sociology of Tourism (September)

Tuesdays 6 – 9 p.m.

(2) Accounting - A Management Approach
(4) Economic Analysis of Business
(5) Management Information Systems
(6) Marketing Management I
(7) Finance I
(8) Economic Environment of the Firm
(9) Introduction to Modelling Methods
(11) Organizational Theory and Design
(12) Introduction to International Business
(21) Resort Area Development (January)
(23) Travel Agency Management (September)

Wednesdays 6 – 9 p.m.

(1) Survey of Basic Mathematics
(2) Accounting - A Management Approach
(3) Basic Management Statistics
(4) Economic Analysis of Business
(5) Management Information Systems
(7) Finance I
(8) Economic Environment of the Firm
(10) Organizational Behaviour
(12) Introduction to International Business
(15) Agricultural Commodity Trading (January)
(17) Personnel and Industrial Relations (January)
(20) Management Applications in Tourism (January)
(24) Management of Tour Logistics (September)

Thursdays 6 – 9 p.m.

(2) Accounting - A Management Approach
(3) Basic Management Statistics
(4) Economic Analysis of Business
(5) Management Information Systems
(6) Marketing Management I
(7) Finance I
(8) Economic Environment of the Firm
(10) Organizational Behaviour
(13) Agrimarketing (September)
(14) Agribusiness Management (January)
(19) Hotel, Motel and Restaurant Management (January)

Fridays 6 – 9 p.m.

(2) Accounting - A Management Approach
(3) Basic Management Statistics
(4) Economic Analysis of Business
(5) Management Information Systems
(6) Marketing Management I
(9) Introduction to Modelling Methods

11 PROFESSIONAL DEVELOPMENT

392-6702

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Telephone: 392-6702

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MAILING ADDRESS_____

_____

POSTAL CODE_____

MEMBER OF THE PROFESSIONAL CORPORATION OF_____

_____

FIELD OF INTEREST_____

12 1981/82 LECTURERS

CHARTERED ACCOUNTANCY

BAER, Debra ..... *Law*
BALTER, Gary ..... *Financial Accounting*
BLUMER, Arthur ..... *Law*
BOYCHUK, Michael ..... *Auditing*
BURKETT, Ross ..... *Policy*
CYR, Michèle ..... *Financial Accounting*
DUFF, Alistair ..... *Financial Accounting*
EUSTACE, Edward ..... *Computer Auditing*
FERGUSON, Eldon ..... *Managerial Accounting*
FRACKT, Stanley ..... *Financial Accounting*
FRANKEL, Michael ..... *Financial Accounting*
GREGOIRE, Richard ..... *Taxation*
HEREDIA, Raoul ..... *Auditing*
JASKOLKA, Norman ..... *Managerial Accounting*
KAPLAN, Stephen ..... *Managerial Accounting*
KLEINMAN, Robert ..... *Taxation*
LE ROSSIGNOL, Danny ..... *Taxation*
LIVICK, Vivienne ..... *Case Analysis*
MARTIN, Monique ..... *Auditing*
MORRIS, David ..... *Financial Accounting*
NOZETZ, Harry ..... *Financial Accounting*
OLIGNY, Pierre ..... *Auditing*
RAGONESE, Fred ..... *Financial Accounting*
REINBLATT, Neil ..... *Financial Accounting*
STEWART, Michele ..... *Financial Accounting*
TAVARES, Antonio ..... *Computer Auditing*
ZYLBERBERG, Frank ..... *Law*
ZYLBERLICHT, Abe ..... *Taxation*

COMPUTER PROGRAMMING

BACH, Glen ..... *Numerical Analysis*
CHARTO, Suzy ..... *Fortran*
CHIU, George ..... *Fortran*
CRUZ, Danté ..... *Cobol*
GASIOR, Stanley ..... *Data Base*
HIGHAM, Paul *PL/1*
KLING, Norman ..... *Cobol*
LECLERC, Gerald ..... *Cobol*
McNAMEE, Kevin ..... *Assembler*
NASSR, John ..... *APT*
OTOO, Ekow ..... *Fortran*
PANG, Lawrence ..... *Fortran*
SARIKAYA, Behcet ..... *Fortran*
SIMARD, Carole ..... *Fortran*
TAMIRISA, Gopalachary *Systems & Organization*
TICKTIN, Saul ..... *Cobol*
TRINH, Ba Tai ..... *Fortran*

EDUCATION

ARSENAULT, Claude ..... *Art*
ARSENAULT, Rose Hélène ..... *Second Languages*
AULLS, Mark ..... *Reading*
BECK, Elizabeth ..... *Special Education*
BEHNAN, Benoit ..... *Second Languages*
BENAROYA, Sigmund ..... *Special Education*
BENJAMIN, Audrey ..... *Art*
BERGERON, Jocelyne ..... *Second Languages*
BERNADELLI, Antonio ..... *Human Relations*
BETHEL, Elizabeth ..... *Reading*
BLAKE, Marion ..... *Reading*
BRADLEY, Jon ..... *Social Sciences*
BRENNAN, Michael ..... *Science*
BROCK, Patricia ..... *Second Languages*
BURGESS, Donald ..... *Educational Administration*
BUTEAU, Magdalhayne ..... *Second Languages*
CAPELLI, Paul ..... *Physical Education*
CARLEY, Moira ..... *Catholic Studies*
COLDEVIN, Gary ..... *Educational Media*
COLSON, Charlotte ..... *Reading*
CONROD, Scott ..... *Special Education*
CONSEDINE, Morna ..... *Reading*
COOK, Roger ..... *Music*
CORNFIELD, Louise ..... *Art*
COX, Leticia ..... *Educational Psychology*
DEREVENSKY, Jeff ..... *Special Education*
DEVILLE, Audrey ..... *Special Education*
D'HOLLANDER, Ruth ..... *Reading*
DIENAR, Chava ..... *Educational Psychology*
DOULL, Christine ..... *Reading*
DUBEE, Patrick ..... *Reading*
DUQUET-PERRIER, Lyse ..... *Second Languages*
EARLE, Richard ..... *Reading*
FOLCO, Antonio ..... *Second Languages*
FRANCOEUR, Thomas ..... *Catholic Studies*
FRASER, Carol ..... *Second Languages*
GAGNÉ, Antoinette ..... *Second Languages*
GARDINER, Phillip ..... *Physical Education*
GARDNER, William ..... *Educational Media*
GELBART, Felix ..... *Reading*
GREENE, Frank ..... *Reading*
HILTON, John ..... *Catholic Studies*
HODGE, Jane ..... *Physical Education*
HORN, Joan ..... *Special Education*
HUM, Andrew ..... *Family Life*
IGNATIEFF, Maria ..... *Second Languages*
JACK, Richard ..... *Special Education*
JEFFERY, Martin ..... *Catholic Studies*
JOHNSON, Raymonde ..... *Second Languages*
KIRSHNER, Abraham ..... *Special Education*
KROL, Wolfgang ..... *Art*
LAVERS, Robert ..... *Special Education*
LAWLOR, William ..... *Counsellor Education*
LEMASURIER, John ..... *Special Education*
MACLEAN, Margaret ..... *Reading*
MAGER, George ..... *Special Education*
MAGUIRE, Mary ..... *Reading*
MALBOEUF, Roger ..... *Second Languages*
MALLON, Mick ..... *Elementary Education*
MAROUN, Theodore ..... *Family Life*
MCCAW, Muriel ..... *Special Education*
MCNICOL, Shirley ..... *Mathematics*
MARTIN, Howard ..... *Special Education*
MCGILTON, Thayne ..... *Special Education*
MILLER, Edward ..... *Special Education*
MODAFFERI, Domenic ..... *Mathematics*
MONTGOMERY, David ..... *Physical Education*
MAYMAN, Jeff ..... *Human Relations*
NIXON, Martha ..... *Social Sciences*
OLIVER, Jack ..... *Physical Education*
OULTON, Richard ..... *Educational Media*
PALUMBO, Suzanne ..... *Second Languages*

PAPKE, Clifford ..... *Art*
PATTON, Gregory ..... *Vocational Education*
PINTO, Francis ..... *Catholic Studies*
POLAK, Edward ..... *Special Education*
POLLARD, Michael ..... *Reading*
PROVENCHER, Andre ..... *Second Languages*
PUPO, Salvatore ..... *Special Education*
PYM, Brenda ..... *Reading*
QUACKENBUSH, Diane ..... *Art*
REBUFFOT, Jacques ..... *Second Languages*
REID, Gregory ..... *Physical Education*
RIGELHOF, Marilyn ..... *Education in English*
ROBERTS, Winton ..... *Special Education*
ROBERTSON, Isobel ..... *Reading*
ROLUF, Marjory ..... *Reading*
ROSS, Ralph ..... *Special Education*
RUSSEL, Eva ..... *Educ. in English*
SHANTZ, Hermione ..... *Philosophy*
SHEARMAN, George ..... *Special Education*
SMITHMAN, Harold ..... *Special Education*
STEVENS, Jacqueline ..... *Elementary Education*
STEVENS, Renée ..... *Educational Psychology*
STINSON, Franga ..... *Reading*
STOCK, David ..... *Special Education*
STUDHAM, Lynn ..... *Art*
STUTT, Howard ..... *Special Education*
TEDFORD, Lee ..... *Educational Psychology*
TERROUX, Georges ..... *Second Languages*
TETRAULT, Lois ..... *Special Education*
THIBEAULT, Lorraine ..... *Music*
TISSHAW, Colin ..... *Special Education*
TONDINO, Gentile ..... *Art*
TREMBLAY, Florent ..... *Second Languages*
TREMBLAY, Roger ..... *Second Languages*
VERRET, William ..... *Educational Media*
WAINRIB, Barbara ..... *Family Life*
WALL, Jennifer ..... *Physical Education*
WASSERMAN, Linda ..... *Reading*
WATLING, James ..... *Art*
WEBB-HEARSEY, Paddy ..... *Educ. in English*
WEST, Ethel ..... *Special Education*
WESTON, Cynthia ..... *Educational Media*
WHITE, Boyd ..... *Art*
WHITE, Joan ..... *Second Languages*
WISE, Audrey ..... *Educational Psychology*
WORENKLEIN, Abraham ..... *Special Education*

ENGINEERING

BOWLES, John ..... *Electrical Engineering*
CREVIER, Daniel ..... *Electrical Engineering*
FLACK, John ..... *General Engineering*
GAVRILOVIC, Momcilo ..... *Electrical Engineering*
GEVAY, Bella ..... *Electrical Engineering*
GUERTIN, Marie-Bernard ..... *Electrical Engineering*
LAWRENCE, André ..... *General Engineering*
NAKRA, Harbans Lal ..... *Electrical Engineering*
STURTON, Anthony ..... *Electrical Engineering*
TURGEON, Andre ..... *Electrical Engineering*
ZAJIC, Vladislav ..... *Electrical Engineering*

LANGUAGES

ABRAMOWICZ, Anna ..... *Polish*
AGOSTINELLI-SILVANO, Josie ..... *Italian*
ALLEN, Wendys ..... *English*
ALONSO, Maria ..... *Spanish*
AMASUNO, Marcelino ..... *Spanish*
AUCLAIR, Myra ..... *English*
AUSTIN, Paul ..... *Russian*
BAKER, Lorne ..... *English*
BARA-GRANAS, Monique ..... *French*
BASTIEN, Richard ..... *French*
BATES, Gerard ..... *English*
BENNETT, Robert ..... *English*
BENOIST, Bernadette ..... *French*
BENUDIZ, Sidney ..... *French*
BERG, Renate ..... *German-English*
BERNSTEIN, Martha ..... *English*
BISENSANG, Lucie ..... *French*
BLAIS, Michel ..... *French*
BOISVERT, Luc ..... *French*
BOURDEAU DE FONTENAY, Hervé ..... *French*
GRUBY-BROTHERTON, Lina ..... *English*
BROWN, Peter Charles ..... *English*
BRUNO, Diana ..... *English*
CALLAHAN, Kevin ..... *English*
CAMPBELL, Keith ..... *English*
CARNU, Carolyn ..... *English*
CARTLIDGE, Roy ..... *English*
CHAKI, Grace ..... *English*
CHANG, Jennie ..... *Chinese*
COLES, Hazel Mary ..... *Translation*
COPPIN, Mary ..... *Translation*
COROMINA, Marta Irène ..... *Spanish*
COTÉ, Paul Raymond ..... *French*
CUNNINGHAM, Joyce ..... *English*
DEFOE, Tracey ..... *English*
De GRANDMONT, Suzanne ..... *Translation*
DEMAINE, Brian ..... *English*
DEMERS, Pierre ..... *French*
DESLAURIERS, Roch ..... *French*
DOERR, Karin ..... *German*
D'URBANO, Anna ..... *Italian*
DURRET, Hélène ..... *French*
EGGER, Maria ..... *English-Hungarian*
FARAH, Louli ..... *French*
FELDMAN, Linda ..... *German*
FERAL, Janine ..... *Translation*
FODOR, Alexander ..... *Russian*
FRANCO, Rosemarie ..... *English*
FRANK, Esther ..... *Yiddish*
FRASER, Carol ..... *English*
FRISCHKOPF, Hans ..... *German*
GALLUP, Joy ..... *English*
GARBER, Rachel ..... *English*
GAUVIN, Denis ..... *Translation*
GIBBONS ZATORRE, Mary Theresa ..... *Portuguese*
GOLDMAN, Ruth ..... *English*
GREEN, Joy ..... *English*
GROULX, DeVaki ..... *English*
GUAJARDO, Luis ..... *Spanish*
GUILLEMETTE, Louise ..... *Comp. Stylistics*
HARVEY, Alexander ..... *English*
HARVEY, Monica ..... *Spanish*
HAINES, Gail ..... *English*
HIMMELSTEIN, David ..... *English*

HOFFMAN, Helga ..... *German*
HOWELL, Betty ..... *Translation*
HUGHES, Terrance ..... *French*
HUMMEL, Kirsten ..... *English*
HYRAT, Loretta ..... *French*
JONES, Jill ..... *English*
KANDER,June ..... *English*
KARAIVAN, Marguerite ..... *Russian*
KARAM,Jean ..... *Arabic*
KHOURY, Jen ..... *Italian*
KOURI, Robert ..... *English*
KREIDERMANN, Kenneth ..... *English*
KROHA, Lucienne ..... *Italian*
KULLY, Elisabeth ..... *German*
LAGACE, Henri ..... *Translation*
LAKOFF, Carol ..... *English*
LEGOUX, Marie-Noëlle ..... *Comp. Stylistics*
LEPAN, Susan ..... *Translation*
LEVY, David ..... *English*
LEVY, Moise ..... *Translation*
LIEBICH, Christine ..... *French*
LIPSEY, S. James ..... *Translation*
LOWI, Mirian ..... *English*
MacDONALD, Leslie ..... *English*
MacGILLIVRAY, Maxine ..... *English*
MacLEOD, Ann Margaret ..... *English*
MAKER, Nancy ..... *English*
MALCOFF, Geraldine ..... *English*
MALONEY, Colleen ..... *English*
MARCOUX, Michèle ..... *French*
MARELLI, Marie-Paule ..... *French*
MARTINEZ, Nelly ..... *Spanish*
MATTHEWS, Grace ..... *English*
MAZURKEWICH, Irene ..... *English*
McALPINE, Lynn ..... *English*
McKENZIE, Jean ..... *English*
McTAVISH, James ..... *English*
MEDINA, Mirta ..... *Spanish*
MELETIS, Jane ..... *English*
MICNER, Josiane ..... *Translation*
MOSETTI, Evelyna ..... *Italian*
MUNSHI, Jal ..... *English*
MURRAY, Susan ..... *English*
MUSACCHIO, Cheryl ..... *English*
MUSZKATEL, Bracha ..... *Hebrew*
NAGASUYE, Janet ..... *English*
NAKRA, Mamata ..... *English*
NERAY, Georges ..... *Translation*
NODAR-MANSO, Francisco ..... *Spanish*
ORY, Marc ..... *French*
OUIMETTE, Victor ..... *Spanish*
PALANDJIAN, Haroutium ..... *W. Armenian*
PASSY-ZELMER, Gaye ..... *English*
PATERA, Tatiana ..... *Russian*
PEACOCK, Ethel ..... *English*
POLONSKY, T ..... *German*
RACICOT, Marie France ..... *Comp. Stylistics*
REINGEWIRTZ, Sarah ..... *English*
RICCIO, Mary ..... *English*
RICHARD, Jean-Yves ..... *French*
ROSSMAN, Morey ..... *English*
RUCKDESCHEL, John ..... *English*
RUFFETT, William ..... *English*
SACCONAGHI, Angela ..... *Italian*
SANSCHAGRIN, Lyne ..... *English*
SIX, Gilles ..... *French*
SLOTE, Daniel ..... *Translation*
SOBCZYK, Anna ..... *Polish*
SPILKA, Irène ..... *Translation*
SPIZZIRRI, Gino ..... *English*
TAKAHATAKE, Masako ..... *Japanese*
TCHAKMAKDJIAN, Nairi Bahlav ... *W. Armenian*
TERRIO, Peter ..... *English*
TERROUX, Georges ..... *English*
THAW, Allan ..... *English*
THAW, Miriam ..... *English*
TOLIS, Maria ..... *Greek*
TRENKER, Kathleen ..... *English*
TUTKO, Gregory ..... *English*
UGALDE, Victoriano ..... *Spanish*
UNGAR, Andras Peter ..... *English*
VALENTINE, Egan ..... *Comp. Styl.*
VARAGNOLO, Louise ..... *French*
VAUGHAN, Kathleen ..... *English*
VIAU, Nicole ..... *French*
VIDAL, Bernard ..... *Translation*
VOGEL, Vickey ..... *English*
VOOS, Celia ..... *English*
WALKER, Jack ..... *English*
WALTZ, Yvonne ..... *French*
WANG, Peggy ..... *Chinese*
WEES, Sylvia ..... *English*
WILSON, Marilyn Y. ..... *English*
WISE, Sydney ..... *English*
WONG, Gordon ..... *English*

LIBERAL ARTS

ADLER, Erik ..... *Creative Writing*
AMIOT, Mary ..... *Medical Secretaries*
AZNAVOUR, Louise ..... *Human Behaviour*
BEAMENT, Tib ..... *Fine Arts*
BLAKE, Patrick ..... *Music Appreciation*
BRADLEY, Ian ..... *Human Behaviour*
CARPENTER, Peter ..... *Religious Studies*
CARTER, Lanita ... *Food and Consumer Science*
DINSMORE, Cynthia ..... *Canadian Studies*
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DUBOIS, André ..... *Interior Design*
FAYERMAN, Faye ..... *Fine Arts*
GARFIN, Judy ..... *Fine Arts*
HADDEN, Patrick ..... *Interior Design*
HIRSH, Richard ..... *Human Behaviour*
JENNAWAY, Elizabeth ..... *Food and Consumer Science*
MARKOW, Robert ..... *Music Appreciation*
NEWMAN, James ..... *Fine Arts*
ROMANO, André ..... *Archaeology*
SILVERTHORNE, Michael ..... *Classics*
SNIDER, George ..... *Classics*
STIPIC, Desanka ..... *Medical Secretaries*
THOMSON, Gary ..... *Archaeology*
WILSON, Heather ..... *Medical Secretaries*

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ABERRA, W ..... *Economics*
ABT, S ..... *Marketing*
ARCHIBALD, J ..... *Business Communications*
BANA, I ..... *Economics*
BELLEAU, P ..... *Computer and Systems*
BICKLEY, K ..... *Banking Management*
BIERBRIER, E ..... *Accounting*
BLAKELY, H ..... *Accounting*
BORTS, M ..... *Marketing*
BOYCE, A ..... *Accounting*
BURNETT, E ..... *Organizational Behaviour*
CAMPEAU, J.G. ..... *Law*
CHAGNON, A ..... *Real Estate*
CHARBONNEAU, J.R. ..... *Organizational Behaviour*
CHAUSSÉE, M ..... *Accounting*
CHOUINARD, M ..... *Insurance*
KLIENMAN, J ..... *Health Care*
CONSTANTINIDES, J ..... *Organizational Behaviour*
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DESERRES,Y ..... *Management Science*
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ELLIS, Willard H ... *Management Applications in Tourism*
ETEMAD, Hamid ..... *International Business*
FRASER, James ..... *Organizational Behaviour*
FRENCH, Richard ..... *Organizational Theory*
FRIESEN, Peter ..... *Modelling Methods*
GOBEIL, Robert ..... *Accounting*
GOFFIN, Jean-Louis ..... *Modelling Methods*
GOSSELIN, Roger ..... *Organizational Theory*
GREGOIRE, Yvan ..... *Hotel Management*
GRIGGS, Ken ..... *Management Information Systems*
HEAPHY, John ..... *Accounting*
HILLS, Theodore ..... *Geography of Tourism*
HOCHSTEIN, Alan ..... *Economics*
JOHAR, Jotindar ..... *Marketing*
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SINGH, Jacqueline ..... *International Business*
SMITH, Brian ..... *Statistics*
SMITH, Graham ..... *Accounting*
SOMERS, Bertram ..... *Economics*
SRINIVASAN, Robert ..... *Statistics*
STOCK, Richard ..... *Organizational Behaviour*
STOTT, David ..... *Accounting*
TSAGAROPOULOS, Marie ..... *Travel Agency Management*
YALOVSKY, Morty ..... *Statistics*
YARISH, Allan ..... *Economics*

Calendars 1982-1983

1982

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August

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November

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Faculty of Dentistry

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Telephone (514) 392-4923

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All courses listed in this announcement will be offered in 1982-83 unless a • appears left of the course number.

The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees, schedules and the revision or cancellation of particular courses.

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Dental Surgeon in Chief, Sir Mortimer Davis, Jewish Hospital

2 HISTORY

2.1 THE UNIVERSITY

The Hon. James McGill, a leading merchant and prominent citizen of Montreal, who died in 1813, bequeathed an estate of forty-six acres called Burnside. Place together with £10,000 to the 'Royal Institution for the Advancement of Learning' upon condition that the latter erect "upon the said tract or parcel of land, an University or College, for the purpose of education and the advancement of learning in this Province", and further upon condition that "one of the Colleges to be comprised in the said University shall be named and perpetually be known and distinguished by the appellation of 'McGill College'.

The Royal Institution, although authorized by law in 1801, had not yet been created but was instituted in 1819. In 1821 it obtained a Royal Charter for a University to be called McGill College. Further delay was occasioned by litigation, and the Burnside estate was not acquired until March 1829. The Montreal Medical Institution which had begun medical lectures at the Montreal General Hospital in 1822 was accepted by the College as its Faculty of Medicine in June 1829. After further litigation, the College received the financial endowment in 1835 and the Faculty of Arts opened its doors in 1843.

Since 1893 the University has continued to grow vigorously. In 1884 the first women students were admitted and in 1899 the Royal Victoria College was opened, a gift of Baron Strathcona, to provide separate teaching and residential facilities for women students. Gradually, however, classes for men and women were merged, and now the University is wholly coeducational. In 1907 Sir William Macdonald established Macdonald College at Ste. Anne de Bellevue as a residential college for Agriculture, Household Science, and, the School for Teachers which is now the Faculty of Education and is located on the Montreal campus. The University's general development has been greatly facilitated by the generosity of many benefactors, great and small, and particularly by the support of its graduates, as regular public funding for general and capital expenditures did not become available until the early 1950's. Since that time government grants have become the major factor in the University's financial operations, but it still relies on private support and benefactions in its pursuit of high quality teaching and research.

The University now comprises twelve faculties and nine schools. At present some twenty thousand students are taking regular university courses. New buildings have been erected or acquired to provide the undergraduate and research facilities needed by the increased student body. In addition, residences, a gymnasium, swimming pools and a winter stadium as well as a University Centre and a concert hall have been added.

The University is also active in providing courses and programs to the community through the Centre for Continuing Education where over fifteen thousand students are registered.

2.2 FACULTY OF DENTISTRY

The history of the McGill Faculty of Dentistry dates back to 1903. Its origin, however, goes back to 1892 when the Association of Dental Surgeons of the Province of Québec founded, in Montreal, a dental school known as the Dental College of the Province of Québec. Instruction in this College was in both English and French and the College was located on Phillips Square. This College became associated with Bishop's University in Lennoxville, Québec, four years later as a department in the Faculty of Medicine of that University, but remained situated in Montreal. In this way the clinical training was provided by the College and the academic training by the University. The first D.D.S. degree in the Province of Québec was granted by Bishop's University.

The McGill Dental School was established in June 1904 as a department in the Faculty of Medicine and continued as such until 1920 when it became known as the Faculty of Dentistry.

The Faculty of Dentistry has always been closely associated with the Montreal General Hospital, having its first dental clinic in the old morgue of that Hospital. In 1923 an annex was built onto the old Montreal General Hospital as a temporary dental clinic and there the clinic remained until the new Hospital was built in 1955, and all facilities moved to these quarters, which were subsequently enlarged and modernized in 1972.

Clinical teaching in the Faculty is mainly carried out in the dental clinic at the Montreal General Hospital, complemented by rotations to other teaching hospitals. Pre-clinical teaching laboratories are housed in the Strathcona Anatomy and Dentistry Building, on campus, and some basic science subjects are still taught in conjunction with the Faculty of Medicine.

3 GENERAL INFORMATION

3.1 ADMISSION PROCEDURES AND REQUIREMENTS

Application for admission to the Faculty of Dentistry must be made upon the University and Faculty forms which may be obtained from the Administrative Assistant (Student Affairs). As the number of students in each class is limited, application should be made early and in any case not later than the *first of March.* Each application must be a accompanied by a *non-returnable fee of $15.00* in the form of a certified cheque or money order payable to McGill University. Undergraduate students registered at McGill are exempt from this fee.

Admission is selective, and students are reminded that fulfillment of the minimum requirements by no means guarantees acceptance. At the present time, the majority of applicants have met more than the minimum requirements and for this reason students are usually accepted from the second year of University or higher.

The minimum requirement for admission to the study of dentistry is the satisfactory completion of EITHER a) a collegiate program in the Province of Québec with a D.C.S. which must include full courses (two semesters) as follows:

- Biology 301, 401
- Chemistry 101, 201, 202
- Mathematics 103, 203
- Physics 101, 201, 301

Students who have not taken Chemistry 302 will be required to take an equivalent course in their first university year.

OR b) two full years in a university program, or equivalent, leading to the B.A. or B.Sc. degree and must include at least one full year course (two semesters) in each of the following subjects:

- General Biology or Zoology (half year of Botany and half year of Zoology will be accepted, but not one year of Botany alone)
- Inorganic or General Chemistry, with laboratory
- Organic Chemistry, with laboratory
- Mathematics
- Physics, with laboratory

The results of all prerequisite subjects *must* be submitted to this Faculty prior to *June 30* for September registration.

Canadian applicants are requested to undertake the Canadian Dental Association Aptitude Test and have the results sent to the Faculty. Detailed information may be obtained from the Administrator, Dental Aptitude Test Program, The Canadian Dental Association, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6.

Candidates applying from the United States should take the American Dental Association Aptitude Test and have the results sent to the Faculty of Dentistry.

A reservation fee of $50.00 is payable by Province of Québec applicants within ten days of the receipt of notice that the student has been accepted for admission; all other accepted applicants must pay a reservation fee of $250.00. This fee will be credited towards the applicant's University fees, but *will not be returned* if the student fails to register.

3.2 ENTRANCE TO ADVANCED STANDING

Due to space limitations, applications from transfer students and graduates of foreign dental schools will be considered for admission to the Faculty only if space permits.

3.3 AWARD OF McGILL B.Sc. DEGREE

On the successful completion of the second year of the Dental program, students who have entered this Faculty from the Faculty of Science at McGill University may, under certain circumstances, apply for their B.Sc. degree. Students wishing to be considered must submit a written application to the office of the Associate Dean of Science at least four months before convocation.

3.4 PROFESSIONAL PRACTICE

Applicants are reminded that a University degree in dentistry does not in itself confer the right to practise the profession of dentistry. It is necessary to comply with the dental laws of the country, province or state in which it is proposed to begin practice. Students, therefore, are advised to register their qualifications at the beginning of their University course with the licensing body in the area in which they intend to practise.

3.5 PROVINCIAL REQUIREMENTS

3.5.1 Province of Québec

All students who are registered in the first year of the Faculty of Dentistry, McGill University, *must* register with the Order of Dentists of Québec. The registration fee is $25.00. Further information may be obtained from the Registrar of the Order of Dentists of Québec, 3565 Berri Street, Suite 200, Montreal, P.Q. H2L 4G3.

Candidates who have successfully completed the regular program as given in the Faculty of Dentistry, McGill University, may be granted the licence; provincially, by the satisfactory completion of the Order of Dentists of Québec progress survey throughout the program and by meeting the French language requirement; and nationally, by registering with the National Dental Examining Board prior to the completion of the final year of studies.

LANGUAGE REQUIREMENT FOR PROFESSIONS

Québec law requires that candidates seeking admission to provincially-recognized Québec professional corporations* must possess a working knowledge of the French language, i.e. be able to communicate verbally and in writing in that language.

To demonstrate this capability, candidates will be required to pass an examination set by the Office de la langue française, unless they can show that three years of instruction in a French post-primary school have been completed. The professional corporation will require this proof of attendance or of successful completion of the Office examination.

Examinations take place every three months and may be attempted an unlimited number of times.

The examination may be attempted by registered students during the two years prior to the date they receive a degree giving access to a professional corporation. Arrangements for sitting the exam while still a student must be made through the faculty office.

More information may be obtained from the Office de la langue française, Tour de la Bourse (Place Victoria), 15e étage, Montréal, Québec H4Z 1G8, Telephone 873-8361.

Students who need to acquire a functional level of proficiency in French may register in courses at either the English and French Language Centre, 3438 McTavish Street, Telephone 392-5727, for courses during the day, or at the Centre for Continuing Education, Redpath Library Building, 3461 McTavish Street, Telephone 392-4901, for courses in the evening.

Students already proficient in French but who wish to keep up practice may register in courses at the Department of French Language and

Literature, 3460 McTavish Street, Telephone 392-4577, or at the Centre d'études canadiennes-françaises, 3475 Peel Street, Telephone 392-5200.

**McGill degrees and diplomas currently give access to corporations regulating the activities of the following professional groups:*

Advocates
Agrologists
Architects
Chartered Accountants
Chartered Administrators
Chartered Appraisers
Chemists
Dentists
Dietitians
Engineers
Industrial Administration Accountants
Industrial Relations Counsellors
Licensed General Accountants
Notaries
Nurses
Occupational Therapists
Physicians
Physiotherapists
Psychologists
Social Workers
Speech Therapists and Audiologists
Urbanists
Vocational Guidance Counsellors

3.5.2 Other Provinces

The following is a list of the provincial Dental Boards in Canada. Students are advised to write to those listed below for information whenever they are in doubt as to the regulations of any province.

ALBERTA – Dr. B.P. Martinello, Executive Director, Registrar, Alberta Dental Association, 8230-105 Street, Suite 101, Edmonton T6E 5H9

BRITISH COLUMBIA – Dr. G.R. Thordarson, Registrar, College of Dental Surgeons of British Columbia, 1125 West 8th Avenue, Vancouver V6H 3N4

MANITOBA – Dr. W.W. Shortill, Registrar, Manitoba Dental Association, 201-308 Kennedy Street, Winnipeg R3B 2M6

NEW BRUNSWICK – Dr. J.G. Thompson, Executive Director-Registrar, New Brunswick Dental Association, P.O. Box 478, Rothesay

NEWFOUNDLAND – Dr. Bruce L. Bowden, Registrar, Newfoundland Dental Board, 205 LeMarchant Road, St. John's A1C 2H5

NOVA SCOTIA – Dr. S. G. Bagnall, Secretary-Registrar, Provincial Board of Nova Scotia, P.O. Box 604, Halifax B3J 2R7

ONTARIO – Dr. Kenneth F. Pownall, Registrar, The Royal College of Dental Surgeons of Ontario, 230 St. George Street, Toronto M5R 2N5

QUEBEC – Dr. Charles Gosselin, Registrar, Order of Dentists of Québec, 3565 Berri St., Suite 200, Montreal, H2L 4G3

PRINCE EDWARD ISLAND – Dr. R.D. Wenn, Secretary-Registrar-Treasurer, Dental Association of Prince Edward Island, P.O. Box 280, Cornwall C0A 1H0

SASKATCHEWAN – Dr. G. H. Peacock, Secretary-Registrar-Treasurer, College of Dental Surgeons of Saskatchewan, 811-105-21st Street East, Saskatoon S7K 0B3

3.5.3 National Dental Examining Board of Canada

The National Dental Examining Board of Canada issues a certificate to successful candidates which may be registered with the Canadian provincial licensing boards for the purpose of securing a licence to practise. This privilege will be granted only on receipt of a proper application dated not later than March 30th of the year of graduation. Failure to apply by that date will entail the passing of an examination in order to receive the certificate.

Candidates must hold a degree in dentistry from a school of dentistry approved by the Council on Education of the Canadian Dental Association at the time of graduation; or be certified by the Dean or Registrar of a University as a bona-fide senior year student of an approved dental school.

Detailed information may be obtained from the Registrar, National Dental Examining Board of Canada, 100 Bronson Street, Suite 103, Ottawa, Ontario K1R 6G8.

3.5.4 National Dental Examining Board of the U.S.

Students intending to practise in the United States are advised to contact the Secretary, Council of the National Board of Dental Examiners, American Dental Association, 211 East Chicago Ave., Chicago, Illinois 60611. Information should also be obtained from the Secretary of the licensing board of the specific state in which the student intends to practise.

3.5.5 Registration

Registration for the 1982-83 session will be held on Tuesday, September 7. Information and forms for payment of fees will be forwarded in the summer. First year lectures will begin on Monday, August 30, 1982 and Second, Third and Fourth year lectures on Wednesday, September 8, 1982.

3.6 FEES

The University reserves the right to make changes without notice in its published scale of

fees if, in the opinion of the Board of Governors, circumstances so require. Fees are not refundable except under special conditions described in the *General Announcement.*

TUITION FEES

Annual undergraduate tuition fee (all years)	$570.00
($4350.00 for new foreign students $3,500.00 for returning foreign students)	
Student Services fee (all years).	95.00
Student Societies fees (all years including Dental Review)	37.50
By instalments: Each of two instalments (plus one half of the applicable equipment supplies and rental fees noted below)	351.25

REPEATING A YEAR

Students repeating a year pay fees as listed above.

EQUIPMENT SUPPLIES
(All amounts are for rental only)

In First year – Instrument & equipment	$450.00
– Microscope	$ 30.00
In Second year – Handpiece (low speed)	$ 25.00
In Second year – Handpiece (high speed)	$ 25.00
In Second year – Instrument & equipment	$560.00
In Third year – Handpiece	$ 25.00
In Third year – Instrument & equipment	$560.00
In Fourth year – Handpiece	$ 25.00
In Fourth year Instrument & equipment	$560.00

AD EUNDEM FEE

Transfer students entering any year above the first pay a special *ad eundem* fee of $10.00

GENERAL REGULATIONS

NEW STUDENTS

Students entering the University for the first time are required to pay their fees either by mail or in person at the Accounting Office.

The first instalment is due 10 days after registration, the second instalment by January 15, 1983.

A late payment fee of $10.00 is charged for payment within the first 30 days; and $25.00 thereafter.

RETURNING STUDENTS

Students who have completed one or more years and intend to register in the succeeding year must pay one half of the total sessional fee by mail or in person to the Accounting Office before August 18, 1982. Instructions for paying fees in advance will be mailed to all returning students, either with their Reports of Standing or a short time later. Students who have been notified by the University of the award of a scholarship, bursary, or student loan, and who require this for payment of the Fall term fees, must obtain permission to delay payment fees from the Student Aid Office.

The Winter term fees are due by January 15, 1983. A late payment fee as stated above is charged for payment after this date.

LATE REGISTRATION

Students registering late **must** pay their fees at the time of registration, failing which they become subject to the late payment fee and the provisions of the following paragraph:

Transcripts of record, diplomas and permission to re-register will be withheld if tuition fees as well as outstanding residence fees, library fines or other charges are not paid by the specified dates.

3.7 GRADUATION FEE

Applications by students who expect to graduate at the Spring Convocation must be filed by April 1st of each year and by those who expect to graduate at the Fall Convocation by October 15th of each year. An application form will be mailed to each eligible student and must be returned to the Registrar's Office together with the application for graduation fee of $25.00 by the appropriate date listed above. It is the students' responsibility to ensure that their names are included in the graduation list.

Note: *Special fees* are given in the *General Announcement.*

3.8 INSTRUMENTS

In addition to the rental fee, certain items of equipment and supplies are purchased by each student.

Approximate cost of this equipment is as follows:

First year	$1500.00
Second year	$2000.00
Third year	$ 800.00

Books are not included in these amounts.

3.9 MEDALS AND PRIZES

FOURTH YEAR:

Dr. A. W. Thornton Gold Medal awarded to the student in the final year attaining the highest overall standing in the four years of the dental undergraduate program.

Dr. J. K. Carver Award, donated by the Order of Dentists of Québec, awarded to the student in the final year attaining the second highest overall standing in the four years of the dental undergraduate program.

Dr. A. L. Walsh Prize awarded to the student in the final year for meritorious achievement in Oral Medicine throughout the clinical undergraduate program.

Dr. W. G. Leahy Prize awarded to the student in the final year for meritorious achievement in Restorative Dentistry throughout the clinical undergraduate program.

McGill Alumnae Society Prize presented annually upon graduation to a distinguished student for excellence and high academic standing. Preference given to women students.

THIRD YEAR:

Dr. Gerald Franklin Prize awarded to the student attaining the highest standing in the examinations in the third year of the dental undergraduate program.

International College of Dentists Prize (Canadian Section) awarded to the student attaining the second highest standing in the third year of the dental undergraduate program.

Canadian Fund for Dental Education Award was established in 1978 by Cooper Laboratories Limited; an award of $250 to be given annually to a third year dental undergraduate student with high academic standing and showing a special interest in preventive dentistry.

Dr. L. A. Cohn Prize awarded to the student attaining the highest standing in Prosthetic Dentistry in the third year of the dental undergraduate program.

SECOND YEAR:

Dr. D. P. Mowry Prize awarded to the student attaining the highest standing in the examinations in the second year of the dental undergraduate program.

Dr. I. K. Lowry Prize awarded to the student attaining the second highest standing in the second year of the dental undergraduate program.

Dr. K. I. Melville Prize awarded to the student attaining the highest aggregate standing in the Basic Science subjects in the first two years of the dental undergraduate program.

Dr. W. C. Bushell Prize awarded to the student attaining the highest aggregate standing in Dental Anatomy and Applied Sciences in the first two years of the dental undergraduate program.

Canadian Fund for Dental Education Award was established in 1978 by Cooper Laboratories Limited; an award of $250 to be given annually to a second year dental undergraduate student with high academic standing and showing a special interest in preventive dentistry.

FIRST YEAR:

Dr. Arthur S. Solomon Prize awarded to the student attaining the highest standing in the examinations in the first year of the dental undergraduate program.

Dr. M. Donigan Prize awarded to the student attaining the second highest standing in the first year of the dental undergraduate program.

3.9.1 Scholarships, Bursaries and Loans

A limited number of Entrance Scholarships are awarded each year to students of high academic standing. These awards are open to Canadian citizens or to permanent residents with one year's residence in Canada.

Details of University and other scholarships and bursaries are given in the *Undergraduate Scholarships and Awards Announcement,* which may be obtained from the Registrar's Office.

The University has a fund from which loans may be made to students of good academic standing.

The Order of Dentists of Québec has created a loan fund to assist students of the Faculty who are registered with the Order. The W. K. Kellogg Foundation Loan Fund and the Dental Students' Society Dean D. P. Mowry Memorial Fund are available to assist any student registered in the Faculty.

Loans are made only to students in the upper years. Applications for all loans should be made to the Student Aid Office.

3.10 CLINICAL FACILITIES

The McGill University Dental Clinic is an integral part of the Department of Dentistry of the Montreal General Hospital. At the Clinic, under the guidance of the dental staff, students are taught to carry out all phases of clinical dentistry and related laboratory procedures.

Third and Fourth year students attend this Clinic daily except for such time as may be taken up by lectures or other University work.

Integration with the Montreal General Hospital offers the facilities of all departments in the Hospital and allows the students to observe a wide variety of interesting and unusual cases under treatment.

3.11 LIBRARY

Undergraduate dental students are fortunate to have, for their use, a modern dental library on the first floor of the Strathcona Anatomy and Den-

tistry Building. The Library's collection includes the pre-clinical sciences, as well as dentistry and periodical literature. The library is open daily and in the evenings for the use of the dental community.

3.12 RESIDENCE ACCOMMODATION

Students who wish to apply for residential accommodation must do so on special forms which may be obtained from the Secretary. Co-Ed Residences, McGill University, 3935 University Street, Montreal, PQ H3A 2B4.

4 STUDENT SERVICES

4.1 OFFICE OF THE DEAN OF STUDENTS

The Dean of Students is responsible for all student services. The Dean, Associate Dean and Liaison Officer are available for consultation with students who would like to discuss individual problems or who seek information about the University and its procedures. Moreover, the Dean and Associate Dean act as unofficial "ombudsmen" and are prepared to help students who feel that "normal channels" are not sufficient in their cases.

The Office of the Dean of Students maintains an "open-door" policy and students are invited to make use of these services at any time.

This office also acts as the coordinating centre for any special support services necessary for a student with a temporary or permanent disability.

Location:	3637 Peel St.
General Information:	392-5364

4.2 SERVICES OFFERED BY THE OFFICE OF THE DEAN OF STUDENTS

4.2.1 Chaplaincy Service

A pastoral service is available through the campus chaplains independent of McGill administration. This service exists to serve the needs of all McGill students, families and staff. The service is related to areas such as problems of faith, premarriage counselling, marital problems, value systems and worship and offers opportunity to work in social service programs.

Information concerning individual denominational services is also available.

Location:	3684 Peel St.
General Information:	392-5890

4.2.2 Student Aid and Foreign Student Adviser's Office

The Student Aid section of this office handles all matters relating to financial assistance whether University, provincial or federal. Non-Canadian students requiring certification of registration and/or letters of advice to Foreign Exchange Control Boards obtain these from this office.

The Foreign Student Adviser's section of this office deals with all matters which may affect non-Canadian students such as problems with the Canadian Department of Manpower and Immigration.

Location:	3637 Peel St.
General Information:	392-5256

4.2.3 Student Counselling Service

The Service provides a place where students of all faculties may discuss any problem confidentially. Among the services offered are individual and group therapy, awareness groups, human relations training, marital and sexual therapy, psychological assessment, vocational testing, effective reading courses, educational and career planning and the Career Information Library.

Location:	3637 Peel Street
General Information:	392-5119

4.2.4 Health Service

Students enrolled at McGill University have available to them a full range of medical service provided by the McGill University Health Service. Medical clinics operate daily, five days of the week from 9.00 a.m. – 5.00 p.m. A physician is always on call at night and on weekends and can be contacted by dialing the Health Service number. There are both male and female physicians on staff as well as a competent staff of college health nurses. Part of the Health Service consists of a *Mental Health Section* which makes available to students psychiatric and psychological help.

This service is available to all full-time students, undergraduate and post-graduate, and part-time students who pay Student Services fees. Students are asked to bring their Medicare cards or equivalent. *All information is completely confidential and forms no part of any University record.*

PARTICIPATION IN ATHLETICS: A student in any academic year wishing to participate in heavy contact athletics, e.g. football, will be required by the Athletics Department to undergo a physical examination at the University Health Service.

Health Insurance: In order to ensure medical coverage while a student at McGill, Canadian students from provinces other than Québec are

advised to consult with the medicare and hospital insurance offices of their own province before coming to McGill. This is particularly important since residents of other provinces are not covered by Québec Medicare and Hospitalization while studying at McGill.

Non-Canadian students and students who are non-permanent residents, whether undergraduate or post graduate, are obliged to enrol in the McGill Non-Canadian Student Health and Accident Insurance Plan. Consequently, students and their dependents are covered to a large extent for medical and hospital expenses during the academic year. Information concerning this plan may be obtained at the general office of the Health Service or from the Liaison Officer to the Dean of Students.

Location:	3637 Peel Street
Appointment and General Office	392-5441, 5446

4.2.5 Off-Campus Housing Service

Students unable to secure a room in residence should apply **in person** to the

Off-Campus Housing Service
3637 Peel Street
General Information: 392-4554

This office maintains an up-to-date computerized list of available off-campus housing, including rooms, apartments of various sizes and a list of students who want to share accommodation.

Students living off-campus may purchase a meal card entitling them to eat regularly at the Co-ed Residences. Individual meals can be purchased both at the Co-Ed Residences and at the Royal Victoria College by both men and women students living off-campus.

4.2.6 Housing for Married Students

The University maintains a limited number of apartment units in several nearby locations for married students. As the demand for these apartments greatly exceeds the number of vacancies occurring each year, applications are restricted to married, full-time undergraduate and graduate students who have not yet attained the Ph.D. or M.D. degree or equivalent. Further information and application forms may be obtained from the Real Estate Office, Apt. 202, 3575 University Street, Montreal, PQ H3A 2B1.

4.2.7 Student Placement

The Canada Employment Centre provides a comprehensive placement service to students who are Canadians or permanent residents seeking part-time, summer and permanent employment. The principal aims of the service are to encourage employers to make available a wide variety of job opportunities to McGill students; to assist students in finding suitable employment, by providing information on the labour market and arranging interviews with prospective employers; to encourage students to prepare for a career by doing their own research into the labour market, through library facilities, seminars, summer and part-time jobs.

Location:	3637 Peel Street
General Information:	283-4411

4.2.8 Athletics

McGill's facilities for athletics, physical education, and recreation are centered in the Sir Arthur Currie Memorial Gymnasium, the Percival Molson Memorial Stadium, the McConnell Winter Stadium and the Garfield Weston Pool. Sports facilities in the gymnasium include basketball, squash, badminton, and volleyball courts; swimming pool; facilities for gymnastics, fencing and judo. Molson Stadium track facilities include a playing field for soccer, football and women's field hockey. The track may also be used for jogging.

The athletics instructional program provides a learning environment for students, staff, and alumni in a variety of leisure time sports.

Numerous intramural and recreational activities provide opportunities for students, staff and alumni to participate for fun, fitness and competition both on and off-campus.

On the intercollegiate level McGill competes in sports sponsored by the Québec Universities Athletics Association, the Ontario Women's Intercollegiate Athletics Association and the Canadian Interuniversity Athletics Union.

Complete information concerning McGill athletics may be obtained from the Athletics Office in the Currie Gymnasium or by calling 392-4725.

4.3 ADDITIONAL SERVICES

4.3.1 Bookstore

The McGill University Bookstore, located in the Bronfman Building at 1001 Sherbrooke Street West, provides a comprehensive stock of current textbooks, reference material and academic supplies as well as items of general interest. It is administered by a Senate committee representing the students, the faculty and the administration.

4.3.2 Extra-Curricular Activities

There are over 250 activities and clubs which students may join. These include international

clubs, religious groups, political clubs, fraternities, communications (Radio McGill), the McGill Daily and some 50 miscellaneous groups (such as science clubs, literary, theatrical and musical societies, chess and bridge clubs, and the McGill Outing Club). The University Centre, at 3480 McTavish Street, provides club rooms for these activities in a modern four-storey building, with cafeterias, a ball-room, lounges, and an experimental theatre.

4.3.3 Student Orchestra, Choir, and Wind Ensemble

The McGill Symphony Orchestra, the Concert Choir and the McGill Wind Ensemble have some vacancies for advanced instrumentalists or experienced choir singers. Acceptance into these ensembles is by audition usually held in September during the week prior to the beginning of classes. For further information, contact the office of the Faculty of Music (Telephone 392-4501).

5 PROGRAM FOR THE DEGREE OF D.D.S.

5.1 CURRICULUM*

Candidates for the degree of Doctor of Dental Surgery must have completed the requirements for entrance as noted in Section 3.1, before entering upon the four-year program in this Faculty.

The dental curriculum is as follows:

FIRST YEAR

Anatomy, Human
- Head and Neck
- Neuroanatomy
- Systematic

Applied Sciences
- Dental Materials
- Operative Dentistry
- Prosthodontics (Fixed)
- Prosthodontics (Removable)

Behavioural Science
Biochemistry
Dental Anatomy
Embryology
Growth and Development
Histology, General
History, Dental
Microbiology
Occlusal Studies I
Oral Biology
— Microbiology
Orientation in Dentistry
Physiology
Statistics

SECOND YEAR

Dental Materials
Occlusal Studies II
Operative Dentistry
Oral Biology
- Biochemistry
- Histology
- Physiology

Oral Diagnosis
Orthodontics
Nutrition
Pathology, General
Pathology, Oral
Periodontology
Pharmacology, General
Preventive Dentistry
Prosthodontics (Fixed)
Prosthodontics (Removable)
Radiology

THIRD YEAR

Anaesthesiology
Anxiety and Pain Control
Behavioural Science
Community Dentistry
Dental Pharmacology and Therapeutics
Endodontics
Medicine
Operative Dentistry
Oral Diagnosis
Oral Surgery
Orthodontics
Paedodontics
Periodontology
Prosthodontics (Fixed)
Prothodontics (Removable)
Radiology

FOURTH YEAR

Endodontics
Jurisprudence
Oral Diagnosis/Radiology
Oral Surgery
Operative Dentistry
Oral Medicine Seminar
Orthodontics
Paedodontics
Paedodontic Seminar
Periodontology
Practice Administration
Prosthodontics (Fixed)
Prosthodontics (Removable)
Restorative Dentistry Seminar

COMMUNITY INVOLVEMENT

Visits are conducted to elementary schools once every academic session. All students are required to participate every year.

TABLE CLINICS

Students are required to present at least one table clinic on an approved topic while enroled in the undergraduate program.

**It should be understood that this curriculum is subject to change without notice.*

5.2.1 Regulations Governing Grading and Advancement

Final grades are based on oral, written and practical assessments which are held throughout the academic year to measure the progress of students. In most subjects, a final examination is held at the end of the course.

In order to qualify for advancement, a student must attain a grade of 60% or higher in each subject and an overall final grade average of 70% or higher.

Students who pass all courses but do not obtain an overall final grade average of at least 70% will be permitted to take supplemental examinations in two subjects chosen in consultation with the Dean in an attempt to raise their average. If the students do not raise their overall average to at least 70%, they will be permitted to repeat the year.

Students who, by the end of the regular academic year, have failed in not more than two subjects will be permitted to write supplemental examinations in the subject(s) failed. If the students are unsuccessful in a supplemental examination, or their overall average for all subjects remains below 70%, they will be permitted to repeat the year. Students who fail in a subject comprising laboratory or clinical components may be required to fulfill prescribed additional laboratory or clinical work before presenting themselves for supplemental examinations. A fee may be attached to these requirements. These requirements will not be considered as a substitute for the supplemental examination itself.

Supplemental examinations will be held during the months of July and August. Applications for supplemental examinations must be made to the Administrative Assistant (Student Affairs) at least 30 days before the date set for each examination and must be accompanied by a fee of $10.00 for each examination.

A student who is repeating a year must attain, during the regular academic year, passing final grades in each course and an overall final grade average of 70% or higher. If this standard is not achieved the student will be required to withdraw from the Faculty without recourse to further supplemental examinations. A student who has repeated one year in the Faculty is ineligible to repeat another year.

A student who has failed in three or more subjects by the end of the regular academic year will be required to withdraw from the Faculty.

If a student is unable to appear for an examination due to illness or personal matters, the Dean's office must be notified in writing prior to the examination date, or not later than 72 hours after the scheduled examination period. Request for special consideration should be directed to the Dean's office and must be supported by relevant medical documentation. A student granted special consideration as a result of such a request could, at the discretion of Faculty, be excluded from receiving Faculty awards.

Notwithstanding any of the above, the Faculty reserves the right to require the withdrawal of a student at any time if the student has displayed unprofessional conduct or demonstrates incompetence.

Though not exhaustive, such matters as failure to show respect for patients, failure to maintain good personal hygiene, failure to assume responsibility for actions taken, failure to adhere to the Codes of Ethics of the Canadian Dental Association or of the Order of Dentists of Québec as they apply to students, patient abuse, or rendering any act on a patient which is considered harmful and which jeopardizes the patient's welfare may be taken into consideration. The procedure to be followed in such instances is found in the by-laws of the hospitals through which students rotate.

5.2.2 Attendance

Students who have failed to attend at least 75% of the lectures, laboratories or clinical periods in any course may be refused the right to attempt the final examination in that course.

5.3 QUALIFICATIONS FOR THE DEGREE

1. Candidates for the degree of Doctor of Dental Surgery shall have attended courses of instruction for four full sessions in the Faculty of Dentistry of this University.
2. Students of other universities who may be admitted to advanced standing in this University are required to pass a qualifying entrance examination and thereafter the same examinations as regular students of this University.
3. Candidates for the degree, admitted in advanced standing as noted above, shall have completed at least the final year of the course at this University.
4. Every candidate for the degree shall provide evidence of satisfactory completion of all of the required subjects which comprise the dental curriculum.

5.4 DENTAL INTERNSHIPS

5.4.1 Residency Programs

a) Multidisciplinary Residency Program

A multidisciplinary residency program is offered at five of the McGill teaching hospitals, the Montreal General Hospital, the Royal Victoria Hospital, the Sir Mortimer Davis-Jewish General Hospital, St. Mary's Hospital and the Montreal Children's Hospital. Positions are available each year starting *July 1.*

Applicants for these positions must submit their applications to the hospital or hospitals concerned by November 30 of the previous year. Further details may be obtained by writing the Director of the Residency Program at any of the participating hospitals (see list below) or by contacting the Faculty of Dentistry, McGill University.

Dr. M. Tyler – Montreal General Hospital
Dr. E.P. Millar – Royal Victoria Hospital
Dr. M. Gornitsky – Sir Mortimer Davis-Jewish General Hospital
Dr. M. Hébert – St. Mary's Hospital
Dr. T.P. McCrory – Montreal Children's Hospital

Applicants must hold a licence to practice dentistry in Québec or be graduates from an accredited Canadian or American university.

b) Residency Program in Oral and Maxillofacial Surgery leading to M.Sc. degree

One candidate is selected each year for this three year program beginning *July 1.* For further information apply to the Division of Oral and Maxillofacial Surgery, Dental Clinic, Montreal General Hospital, 1650 Cedar Avenue, Montreal, P.Q. H3G 1A4.

5.4.2 Student Interns

In the senior year students serve as student interns for a period of five weeks.

During the three weeks spent at the Montreal General Hospital they rotate through the diagnosis and emergency clinics, the Department of Anaesthesia and the Division of Oral and Maxillofacial Surgery. These rotations allow the student to gain a broad experience in the diagnosis and management of hospitalized and ambulatory patients.

The one week rotation to the Sir Mortimer Davis-Jewish General Hospital serves to introduce the student to comprehensive dental treatment as currently provided in a hospital dental department. The one week rotation to the Montreal Children's Hospital serves to reinforce the paedodontic training given at the Montreal General Hospital.

5.5 DENTAL OFFICER TRAINING PLAN

The Dental Officer Training Plan is a subsidization plan offered by the Canadian Forces to eligible dental undergraduates in return for a short period of service following graduation.

The plan is designed to assist dental students financially, in that it provides for payment of tuition, instruments, supplies and books, and in addition, rank and pay as a second lieutenant. The plan also provides training during the summer months for the undergraduate as an officer in the Armed Forces.

To be eligible a student must be able to meet the Canadian Forces standards for enrolment and be academically acceptable, without condition, to any one of the four professional years of the dental faculty.

Full details of the Dental Officer Training Plan may be obtained from Canadian Forces Recruitment and Selection Unit, 1254 Bishop Street, Montreal, PQ H3G 2E3.

6 COURSES OF INSTRUCTION DEPARTMENT OF CLINICAL DENTISTRY

6.1 ENDODONTICS

Associate Professor
- B. Sedlezky, B.Sc., D.D.S.(McG.), F.I.C.D., F.R.C.D.(C). *(Director)*

Assistant Professors
- R.J.C. David, D.D.S.(McG.), F.I.C.D.
- D.J. Munro, B.A., D.D.S.(McG.), F.I.C.D.

Lecturers
- D. Auerbach, B.Sc., D.D.S.(McG.), M.Sc.D.(Boston), F.R.C.D.(C).
- H. Borsuk, D.D.S.(McG.), M.Sc.D.(Boston), F.R.C.D.(C).

Guest Lecturer
- M. Auerbach, B.Sc., D.D.S.(McG.), M.Sc.D. (Boston)

Third Year (590-311P)

The third year program consists of a concentrated course given midway in the year. Included are laboratory exercises, lectures and clinical procedures. Credit is given.

Fourth Year (590-411P)

A concentrated course in the theory and clinical practice of endodontics, correlated with the teachings of the Departments of Microbiology and Immunology, Pathology, Histology, Oral Surgery and Dental Anatomy given midway

through the junior year and followed by weekly clinical sessions until the end of the senior year. (Texts: Ingle, *Endodontics,* Lea and Febiger; Bender and Seltzer, *The Pulp,* Lippincott.)

6.2 DIAGNOSTIC RADIOLOGY

Associate Professor
- E. Shields, B.S.(Ball State), D.D.S., Ph.D.(Ind.) *(Director)*

Co-ordinator Radiographic Technology
- M. Alibranti, B.Sc.(Concord), R.T.A.R.R.T. (Cornell)

Second Year (590-222P)

This course is an introduction to the physical, biological and clinical aspects of dental radiological procedures. Practical application is achieved in the laboratory where students practice exposures on a mannequin. Radiation protection principles are taught at both the didactic and clinical levels.

Third Year (590-322P)

Advanced instruction and additional experience is provided in technique and interpretation. (Texts - Stafne, *Oral Roentgenographic Diagnosis,* Saunders; Barr, Stephens, *Dental Radiology,* Saunders; Manson-Hing, *Fundamentals of Dental Radiography,* Lea & Febiger.

6.3 ORTHODONTICS

Associate Professors
- M. D. Rennert, B.Sc., D.D.S.(McG.), M.S.(Buffalo), F.R.C.D.(C), F.I.C.D. *(Director)*
- R.W. Faith, B.A., D.D.S. (McG.), Cert. Ortho. (Tufts), F.R.C.D.(C), F.I.C.D.

Assistant Professors
- O.S. Kopytov, B.Sc., D.D.S.(McG.), M.Sc.(Minn.)
- H.L. Levitt, B.Sc., D.D.S. (McG.), Cert. Ortho. (Montr.), F.R.C.D.(C)
- L. Prosterman, B.A., D.D.S.(McG.), M.S.D.(Temple), F.R.C.D.(C).
- M. Weinstock, D.D.S.(Tor.), Cert. Ortho., (Harv.), Ph.D.(McG.), F.R.C.D.(C).

Lecturers
- S. Konigsberg, B.Sc., D.D.S.(McG.), M.S., Cert. Ortho. (Tufts)
- M. Wechser, D.D.S.(McG.) Cert. Ortho. (Montr.), F.R.C.D.(C).

Guest Lecturers
- L. Bossé, D.D.S., M.S.(Montr.)
- M. Cardozo, B.A.(Brooklyn), M.A.(Col.)
- H. T. Oliver, D.D.S.(McG.), Dip. Ortho. (Montr.), F.R.C.D.(C), F.A.C.D., F.I.C.D.

Second Year (590-215P)
Third Year (590-315P)
Fourth Year (590-415P)

Courses comprise lectures, technique exercises, treatment of selected cases and seminars.

The purpose of the course is to present as much theoretical background as possible and to make the student familiar with diagnostic procedures and with the preventive, interceptive and limited corrective procedures that can be undertaken in a general dental practice. (Texts - Graber, *Orthodontics,* 3rd ed: W.B. Saunders Co., 1972; Moyers, *Handbook of Orthodontics:* The Year Book Publishers Inc., 3rd Ed., 1973; Hitchcock, *Orthodontics for Undergraduates;* Lea and Febiger, 1974)

6.4 OCCLUSAL STUDIES I and II

Professor
- K.C. Bentley, D.D.S., M.D., C.M.(McG.), Cert. Oral Surg.(N.Y.U. Bellevue), F.I.C.D., F.A.C.D.

Associate Professors
- R.F. Harvey, D.D.S.(McG.), F.R.C.D.(C), F.A.C.D., F.I.C.D. *(Director)*
- D. Kepron, B.Sc.(Man.), D.D.S.(McG.), M.Sc.(Mich.), F.R.C.D.(C).
- P. Lamontagne, B.A., D.D.S.(Montr.), M.S.(Mich.), F.R.C.D.(C).
- P.B. Noble, B.Sc., M.Sc.(Edin.), Ph.D. (W.Ont.)
- A.G. Pullinger, B.D.S.(Lond.), D.D.S., M.Sc.(McG.)
- W.D. Sanders, B.Sc.(Sir G. Wms.), D.D.S.(McG.), F.I.C.D.
- C.E. Smith, D.D.S., Ph.D.(McG.)

Assistant Professors
- J.D. Fenwick, B.Sc., D.D.S.(McG.)
- S. Galperin, B.Sc.(Bogota), Dr. Odont. (Col.), Cert. Perio. and Oral Medicine (N.Y.U.)
- P. Hwang, D.D.S.(Soeul), D.D.S., Dip.Pros. (Rest.Dent.) (McG.)
- C.L. Moran, B.Sc., D.D.S.(McG.)
- E. Ostro, B.Sc.(Sir G. Wms.), D.D.S.(McG.)
- M.D. Shizgal, B.Sc., D.D.S.(McG.)
- M.T. Tyler, B.Sc.(Ohio), D.D.S. (Howard), M.A. (Geo.Wash.)
- A.S. Wainberg, B.Sc., D.D.S.(McG.), Cert. Perio. (Penn.), F.R.C.D.(C).

Lecturers
- J. Bartos, M.U.Dr. (Purzyrije), D.M.D. (Alabama), M.Sc.(McG.)
- G. Konanec, D.D.S.(McG.)
- G. Poznak, B.Sc.(Sir G. Wms.), D.D.S.(McG.)
- M.A. Shum, B.Sc., D.D.S.(McG.)
- A. Tekela, D.D.S.(McG.)
- M. Wechsler, D.D.S.(McG.), Cert. Ortho. (Montr.), F.R.C.D.(C).

Faculty Lecturers
- D.R. Blair, B.Sc., D.D.S.(McG.)
- A.St.O. Byer, B.Sc., D.D.S., Dip. Pros. (Rest.Dent.) (McG.)
- A.S. Israel, B.Sc., D.D.S.(McG.)
- P.M. Woolhouse, B.A.(Queen's), M.Ed. (Bishop's), D.D.S.(McG.)

Guest Lecturers
- M.E. Jeans, N.B.N., M.Sc.A., Ph.D.(McG.)

Teaching Assistant
- P.G. Ayoub, B.Sc., D.D.S.(McG.)

First Year (590-134P)

Fundamentals of the stomatognathic system are presented through lecture, laboratory and clinical sessions.

Second Year (590-234P)

Function and dysfunction of the stomatognathic system are presented in the first semester of second year. Lecturer, laboratory and clinical experience on the technical aspects of the course are presented in the second semester.

6.5 PAEDODONTICS

Associate Professors
- C.T. Dixter, B.Sc.(McG.), D.D.S. (Montr.) Cert. Paedo (Tufts)*(Director)*
- R.P. Dundass, D.D.S.(McG.), M.S.D.(Mich.)
- G.H.G. Weinlander, D.K.F.M.(Vienna), D.D.S.(McG.), F.I.C.D.

Assistant Professors
- S. Schwartz, D.D.S.(Montr.), M.Sc.(Boston)
- P.R. Weinstein, B.Sc., D.D.S.(McG.), Cert. Paedo.(Roch.)

Lecturers
- A. Felgar, B.A. (Sir G. Wms.), D.D.S.(McG.), M.Sc.D.(Boston)
- A. Dudkiewicz, B.Sc., D.D.S.(McG.), Cert. Paedo. (Eastman Dental).

Third Year (590-316P)
Fourth Year (590-416P)

These courses comprise lectures, seminars, preclinical technique laboratory, clinical treatment of children and hospital rotation in paedodontics for sick children.

The aim of these courses is to teach the students comprehensive dental care for children. This is accomplished through lectures and seminars, reviewing pertinent literature, and clinical dentistry for children at the university dental clinic and Montreal Children's Hospital dental clinic. (Texts - Finn, *Clinical Pedodontics:* Saunders; Ellis, *The Classification and Treatment of Injuries to the Teeth of Children.* Year Book Publishers; Law, Lewis, Davis, *An Atlas of Pedodontics,* Saunders; McDonald, *Dentistry for the Child and Adolescent:* Mosby; Dixter, Langlais, Lichty, *Pediatric Radiographic Interpretation:* Saunders 1980).

6.6 GROWTH AND DEVELOPMENT IN CHILDREN

Professor
- G. McKay, B.A.(Dal.), M.A.(Yale & Dal.), Ed.D.(Harv.) *(Course Co-ordinator)*

First Year (590-113P)

This course aims to familiarize the student with cognitive, physical, and behavioural growth of children.

6.7 PERIODONTOLOGY

Associate Professor
- R.F. Harvey, D.D.S.(McG.), F.R.C.D.(C), F.A.C.D., F.I.C.D.*(Director)*

Assistant Professors
- T. Chin Quee, B.D.S.(Dundee), M.Sc. (Chic.)
- S. Galperin, B.Sc.(Bogota), Dr. Odont.(Col.), Cert. Perio. & Oral Med. (N.Y.J)
- E. M. Hershenfield, B.Sc., D.D.S. (McG.), M.Sc.D.(Boston), F.R.C.D.(C), F.I.C.D.
- F.J. Muroff, B.Sc., D.D.S. (Detroit), M.Sc.D.(Boston), F.R.C.D.(C), F.I.C.D.
- M. Stutman, B.Sc., D.D.S.(McG.), M.Sc.D. (Boston)
- A.S. Wainberg, B.Sc., D.D.S.(McG.), Cert. Perio. (Penn.), F.R.C.D.(C)

Lecturers
- M. Moscovitch, B.Sc. (Sir Geo. Wms.), D.D.S.(McG.), Cert. Pros. (Boston)
- M. Werbitt, B.Sc., D.D.S.(McG.), M.Sc.D.(Boston)

First Year (590-118P)
Second Year (590-218P)
Third Year (590-318P)
Fourth Year (590-418P)

Lectures, seminars, review of literature assignments and multi-discipline treatment planning seminars are utilized to co-relate clinical problems and procedures to the basic sciences to prepare the graduating dentist to adequately recognize, prevent and treat most patients with periodontal disease. Emphasis is placed on the practical aspects of treatment including occlusal adjustment, sanative and/or basic procedures designed to arrest and prevent disease. Exposure in lectures is given to all surgical modalities with some experience being acquired in performing various forms of periodontal surgery amenable to student management. (Texts - A Manual of the Department is presented which covers all aspects of the course; Goldman & Cohen, *Periodontal Therapy,* 5th ed., Glickman, *Clinical Periodontology,* 4th ed.; Grant, Stern & Everett, *Orban's Periodontics,* 4th ed.; Ramfjord & Ash: *Occlusion,* 2nd ed.; Reference - J.G. Jones, *Physiological Role of Dental Occlusion in the Masticatory System, Vol. 1 & 2).*

PROSTHODONTICS

Associate Professor
- Donald Kepron, B.Sc. (Man.), D.D.S.(McG.), M.Sc.(Mich.), F.R.C.D.(C). *(Director)*

6.8 APPLIED SCIENCES

Associate Professors
- N. Dibai, D.D.S.(Tehran), M.S.(Ohio)
- Donald Kepron, B.Sc.(Man.), D.D.S.(McG.), M.Sc.(Mich.), F.R.C.D.(C).
- A.G. Pullinger, B.D.S.(Lond.), D.D.S., M.Sc.(McG.)
- W.D. Sanders, B.Sc.(Sir G. Wms.), D.D.S. (McG.), F.I.C.D. *(Director)*

Assistant Professors
- J.D. Fenwick, B.Sc., D.D.S.(McG.)
- C.L. Moran, B.Sc., D.D.S.(McG.)
- E. Ostro, B.Sc.(Sir G. Wms.), D.D.S.(McG.)
- M.D. Shizgal, B.Sc., D.D.S.(McG.)

Lecturers
- J.M. Little, B.A.(Loyola), D.D.S.(McG.)
- G. Poznak, B.Sc. (Sir G. Wms.), D.D.S.(McG.)
- A. Tekela, D.D.S.(McG.)

Faculty Lecturers
- J. Bartos, M.U.Dr. (Purzyrije), D.M.D. (Alabama)
- D.R. Blair, B.Sc., D.D.S.(McG.)
- S. Homayun, D.M.D.(Istanbul), D.D.S.(McG.)
- A.S. Israel, B.Sc., D.D.S.(McG.)
- P.M. Woolhouse, B.A.(Queen's), M.Ed. (Bishop's), D.D.S.(McG.)

Demonstrator in Dental Technology
- I. Blumberger, C.D.T.

First Year (590-115P)

An introduction to the theory and practical application of procedures relating to fixed and removable prosthodontics and to operative dentistry.

6.9 OPERATIVE DENTISTRY

Professor
- H. Rosen, B.Sc., D.D.S.(McG.), F.I.C.D., F.A.C.D.

Associate Professors
- J.V. Blomfield, B.D.Sc.(Melbourne), D.D.S., Dip. Pros. (Rest. Dent.) (McG.), M.Sc. (Lond.), F.R.C.D.(C). *(Head)*
- Donald Kepron, B.Sc.(Man.), D.D.S.(McG.), M.Sc.(Mich.), F.R.C.D.(C).
- W.D. Sanders, B.Sc.(Sir G. Wms.), D.D.S.(McG.), F.I.C.D.

Assistant Professors
- J.R. Fong Chong, B.Sc.(St. F.X.), D.D.S.(McG.)
- H. Greenwald, B.Sc., D.D.S.(McG.)
- P. Hwang, D.D.S. (Soeul), D.D.S., Dip. Pros. (Rest. Dent.) (McG.)
- M. Shevell, B.Sc, D.D.S.(McG.)
- I.I. Silver, B.A., D.D.S.(McG.)
- I. Stangel, D.M.D.(Penn.)
- J.W. Whitehead, B.A.(N.C.), D.D.S.(McG.)

Lecturers
- F.A. Kay, B.Sc.(Loyola), D.D.S.(McG.)
- S.S. Blum, B.Sc., D.D.S.(McG.)
- I. Seltzer, B.Sc., D.D.S.(McG.)
- B. Mendel, B.Sc.(Agr.), D.D.S.(McG.)

Faculty Lecturers
- A. St. O. Byer, B.Sc., D.D.S., Dip. Pros.(Rest. Dent.) (McG.)
- A. Coopersmith, B.Sc., D.D.S.(McG.)
- D. Leith, B.Sc., D.D.S.(McG.)
- W.J. McJannet, D.D.S.(McG.)
- P.R. Owen, B.Sc., D.D.S.(McG.)
- O.C.N. Peloso, B.Sc., D.D.S.(McG.)
- C. Rawas, B.Sc., D.D.S.(McG.)
- M.A. Shum, B.Sc., D.D.S.(McG.)

Second Year (590-214P)
Third Year (590-314P)
Fourth Year (590-414P)

Students receive theoretical, laboratory, and clinical instruction in: diagnosis and treatment planning; prevention; the "biomechanical" treatment for diseased and/or traumatized tooth structure; the anatomical restoration of individual teeth in all age groups to physiologic form and function with the restorative materials generally used by the dental practitioner. (Texts — Howard, *Atlas of Operative Dentistry:* Mosby; Bell and Grainger, *Basic Operative Dentistry Procedures:* Lea & Febiger; Charbonneau et al, *Principles and Practice of Operative Dentistry:* Lea & Febiger; Ingraham and Koser, *An Atlas of Gold Foil and Rubber Dam Procedures:* West Orange County, California; Baum, *Advanced Restorative Dentistry:* Saunders; Gilmore et al, *Operative Dentistry,* Mosby.)

6.10 FIXED PROSTHODONTICS

Professor
- H. Rosen, B.Sc., D.D.S. (McG.), F.I.C.D., F.A.C.D.

Associate Professors
- J.V. Blomfield, B.D.Sc.(Melbourne), D.D.S.(McG.), M.Sc.(London), Dip. Pros. (Rest. Dent.) (McG.), F.R.C.D.(C).
- R.G. Jones, B.A., D.D.S.(McG.), M.Sc.(Ind.), F.R.C.D.(C).
- D. Kepron, B.Sc.(Man.), D.D.S.(McG.), M.Sc.(Mich.), F.R.C.D.(C).
- P. Lamontagne, B.A., D.D.S. (Montr.), M.S. (Mich.) *(Head)*
- E. Ostro, B.Sc.(Sir G. Wms.), D.D.S.(McG.)
- A.G. Pullinger, B.D.S.(Lond.), D.D.S., M.Sc.(McG.)

Assistant Professors
- J.D. Fenwick, B.Sc., D.D.S.(McG.)
- J.R. Fong Chong, B.Sc.(St. F.X.), D.D.S. (McG.)
- H. Ptack, D.D.S.(McG.), Cert. Fixed Prost. (Ill.), F.R.C.D.(C).

Lecturers
- J. Bartos, M.U.Dr. (Purzyrije), D.M.D. (Alabama), M.Sc.(McG.)
- P. V. Goldberg, B.Sc., D.D.S.(McG.), M.S.D.(Wash.)
- S.M. Kennedy, D.D.S.(McG.), M.Sc.(Boston)
- J.M. Little, B.A.(Loyola), D.D.S.(McG.)
- M. Pinchuk, B.Sc., D.D.S.(McG.), Cert. Pros.(Boston)
- H. Skurnik, B.Sc., D.D.S.(McG.)

Guest Lecturers
- G. Harasymowycz, B.Sc.(Loyola), D.D.S., Dip. Pros. (Rest. Dent.)(McG.), M.S.D. Cert. Fixed & Remov. Part. Pros. (Ind.)
- D. Kandelman, D.Chir.Dent. (Marseille), D.Med.Dent.(Geneva), M.P.H. (Harvard)
- R.T. Lamb, B.Sc., D.D.S.(McG.), F.I.C.D., F.A.C.D.
- L.P. Lemay, B.A.(Ott.), D.D.S.(Montr.), M.S.(Mich.)

Demonstrators in Dental Technology
- I. Blumberger, C.D.T.
- A. Woo, C.D.T.

First Year (590-121P)
Second Year (590-221P)
Third Year (590-321P)
Fourth Year (590-421P)

In the pre-clinical years the student is introduced to indirect restorative procedures by lecture series, literature reviews and laboratory projects.

In the clinical years, Fixed Prosthodontic procedures are performed within the overall treatment of clinical patients. Lectures, seminars, and references from the periodic literature complement clinical experience to increase the knowledge and understanding of Fixed Prosthodontics. (Required Text - Shillingsburg, Hobo and Whitsett, *Fundamentals of Fixed Prosthodontics,* 2nd ed., Quintessence Reference Texts - Johnston, Phillips and Dykema, *Modern Practice in Crown and Bridge Prosthodontics,* 3rd ed., Saunders; Tylman, *Theory and Practice of Crown and Fixed Partial Prosthodontics,* 6th ed., Mosby; Myers, *Textbook of Crown and Bridge Prosthodontics,* Mosby; Beaudreau, *Atlas of Fixed Partial Prosthesis,* Thomas; Roberts, *Fixed Bridge Prostheses,* Year Book.)

6.11 REMOVABLE PROSTHODONTICS

Associate Professors
- N. Dibai, D.D.S.(Tehran), M.S.(Ohio)*(Head)*
- D.W. Henry, B.A. (Bishop's), D.D.S.(McG.), F.I.C.D.
- Donald Kepron, B.Sc.(Man.), D.D.S.(McG.), M.Sc.(Mich.), F.R.C.D.(C).

Assistant Professor
- P.C. Staples, D.D.S.(McG.), F.I.C.D.

Lecturers
- S. Homayun, D.M.D. (Istanbul), D.D.S.(McG.)
- G. Konanec, D.D.S.(McG.)
- W. Kowal, B.A., D.D.S.(McG.)
- N. Miller, B.Sc., D.D.S.(McG.)
- G. Poznak, B.Sc.(Sir G. Wms.), D.D.S.(McG.)

Faculty Lecturers
- D.S. Ahn, D.D.S.(Soeul), D.D.S., Dip. Pros. (Rest. Dent.)(McG.)
- C. Galperin, D.M.D.(Istanbul), Cert. Rem. Pros. (N.Y.U.)
- D.E. Wiggins, B.Sc.(C'dia.), D.D.S.(McG.)
- P.M. Woolhouse, B.A. (Queen's), M.Ed. (Bishop's), D.D.S.(McG.)

Guest Lecturer
- J. Valiquette, D.D.S.(Montr.), F.R.C.D.(C).

Demonstrators in Dental Technology
- I. Blumberger, C.D.T.
- A. Woo, C.D.T.

First Year (590-120P)
Second Year (590-220P)
Third Year (590-320P)
Fourth Year (590-420P)

In the pre-clinical years (1st and 2nd years) the students receive the basic theoretical and laboratory instruction related to complete and removable partial dentures.

In the clinical years (3rd and 4th years) the students are introduced to the clinical and theoretical aspects of complete and removable partial dentures which involve the examination, diagnosis, treatment planning, construction of the prostheses and maintenance of the hard and soft tissues. (Texts - Boucher, Hickey and Zarb, *Prosthodontic Treatment for Edentulous Patients* Mosby; Watt and MacGregor, *Designing Complete Dentures,* Saunders; Hartwell, Jr., *Syllabus of Complete Dentures,* Lea and Febiger; Boucher, *Current Clinical Dental Terminology,* Brewer and Morrow, *Over-dentures,* Mosby; McCracken's *Removable Partial Prosthodontics;* Mosby; Miller, *Removable Partial Prosthodontics;* Mosby; Williams & Wilkins; Applegate, *Partial Denture Construction:* Mosby; Zarb et al, *Prosthodontic Treatment for Partially Edentulous Patients,* Mosby)

6.12 ANXIETY AND PAIN CONTROL

Professor
- K.C. Bentley, D.D.S., M.D., C.M.(McG.), Cert. Oral Surg. (N.Y.U.-Bellevue), F.I.C.D., F.A.C.D.*(Director)*

Assistant Professors
- H. Katz, B.Sc., M.Sc., Ph.D., D.D.S.(McG.)
- D.S. Shapiro, B.A., D.D.S.(McG.), M.S.(Iowa)

Guest Lecturers
- M.E. Jeans, N., B.N., M.Sc.A., Ph.D.(McG.)
- A. Surkis, B.A., B.Ph., M.A., Ph.D.(Montr.)

Third Year (590-325P)

An understanding of the complex nature of problems pertaining to anxiety and pain control is provided, and students are made aware that the use of drugs is only one means by which pain and anxiety can be controlled.

Anaesthetic drugs and solutions, the evaluation of new drugs and techniques, with a review of related anatomy are discussed. Demonstrations and clinical experience are provided. (Text - Monheim, *Local Anesthesia and Pain Control in Dental Practice;* Mosby)

6.13 ANAESTHESIOLOGY

Professor
- I. Metcalfe, B.S., M.B. (W. Australia), F.F.A.R.A.C.S., F.R.C.P.(C).

Third Year (590-324P)

General principles and the physiology of general anaesthesia with emphasis on factors of safety and the suitability of the agent used are discussed. Cooperation with the anaesthetist under hospital or office conditions and emergency resuscitative measures are stressed. (Text - Gerald D. Allen, *Dental Anaesthesia & Analgesia (Local & General),* 2nd ed. Williams & Wilkins.

6.14 MEDICINE

Associate Professor
- Blair Whittemore, B.A.(Bishop's), M.D., C.M. (McG.), L.M.C.C., F.R.C.P.(C), C.S.P.Q. *(Chairman)* and Staff

Third Year (526-313P)

A review of the principles of medicine with particular attention to the importance of common medical diseases to the dentist; oral manifestations of systemic disease and the importance of oral health in the successful treatment of certain medical conditions; medical complications of dental surgery and their prophylaxis.

6.15 SURGERY, ORAL and MAXILLOFACIAL

Professor
- K.C. Bentley, D.D.S., M.D., C.M.(McG.), Cert. Oral Surg.(N.Y.U. Bellevue), F.I.C.D., F.A.C.D.*(Director)*

Associate Professors
- J.J. McCarthy, B.Sc.(St.F.X.), D.D.S.(McG.), Dip. Oral Surgery (Penn.), F.R.C.D.(C), F.I.C.D.
- E.P. Millar, D.D.S.(McG.), Dip. Oral Surgery (Penn.), F.R.C.D.(C), F.I.C.D. *(Associate Director)*

Assistant Professors
- J.R. Emery, D.D.S., M.Sc.(McG.)
- G.L. Freedman, D.D.S. (McG.), M.S.D. (Wash.), F.R.C.D.(C).
- T.W. Head, B.Sc. (Sir G. Wms.), D.D.S., M.Sc.(McG.)
- E. Slapcoff, B.Sc., D.D.S. (McG.), F.R.C.D.(C)
- D.S. Shapiro, B.A., D.D.S.(McG.), M.S. (Iowa)

Faculty Lecturers
- J. Sherman, D.D.S.(McG.)
- B. Sternthal, B.A.(Loyola), D.D.S., M.Sc. (McG.)

Third Year (590-323P)
Fourth Year (590-423P)

These courses are designed to help students develop a foundation of professional knowledge coupled with surgical skills to enable them to diagnose and manage competently the oral surgery problems related to the practice of general dentistry. The student is also expected to acquire an academic appreciation of the advanced field of oral surgery, which involves the diagnosis, treatment, prescribing for and operating upon any disease, injury, malformation or deficiency of the human jaws or associated structures. (Texts and Reference Books - Thoma, *Oral Surgery,* Archer, *Oral Surgery;* Waite, *Textbook of Practical Oral Surgery;* Lea & Febiger; Rowe and Killey, *Fractures of the Facial Skeleton;* Kazanjian and Converse, *The Surgical Treatment of Facial Injuries;* Schwartz, *Disorders of the Temporomandibular Joint;* H.G. Clark, *Practical Oral Surgery;* G.L. Howe, *The Extraction of Teeth,* G.O. Kruger, *Text-book of Oral Surgery;* Killey and Kay, *Benign Cystic Lesions of the Jaws).*

6.16 DIAGNOSIS, ORAL

Associate Professor
- E. Shields, B.Sc., D.D.S.(Ind.), Ph.D. *(Acting Director)*

Assistant Professor
- M. Tyler, B.S. (Ohio), D.D.S. (Howard), M.A. (G. Wash.)

Faculty Lecturer
- M. Schwartz, B.Sc., D.D.S.(McG.)

Guest Lecturer
- R.B.J. Dorion, B.Sc., D.D.S.(McG.)
- I. Stangel, D.M.D.(Penn.)

Second Year (590-235P)

An introduction to basic principles of oral

diagnosis and clinical oral radiology. The lectures are meant to prepare the student for clinical experience in oral diagnosis.

Third Year (590-335P)

To introduce the student, through both clinical and didactic experiences, to a methodology of collecting and evaluating appropriate clinical and laboratory data. The importance of an investigation of relevant literature and the understanding of biology of disease is emphasized. The student is then taught to use obtained information to evaluate the health status of patients, diagnosis problems of the orofacial complex and to make decisions about comprehensive management. (Text-Wood and Goaz *Differential Diagnosis of Oral Lesions,* Mosby; Eversole, *Clinical Outline of Oral Pathology,* Lea & Febiger. Little and Falace, *Dental Management of the Medically Compromised Patient,* Mosby.)

The course also provides an introduction to Forensic Dentistry. This includes malpractice and negligence lawsuits, evaluation of traumatic injuries, insurance and/or compensation claims, as well as identification.

DEPARTMENT OF COMMUNITY DENTISTRY

6.17 BEHAVIOURAL SCIENCE

Professor
- J. W. Stamm, D.D.S.(Alta.), D.D.P.H., M.Sc.D. (Tor.), F.R.C.D.(C), Dip.A.B.D.P.H.

Lecturer
- F. Vosburg, B.A., D.D.S.(McG.)

590-327P

This course aims to increase the student's familiarity with the impact of disease on a patient's style of living, his socio-economic security, and his family. It will cover tasks in life as well as style in living from infancy to old age. Sessions involve presentation of live patients, selected films and audio-visual material. Ample time is devoted to small group discussion.

6.18 COMMUNITY DENTISTRY

Professor
- J. W. Stamm, D.D.S.(Alta.), D.D.P.H., M.Sc.D.(Tor.), F.R.C.D.(C), Dip. A.B.D.P.H.

Assistant Professor
- D.C. Clark, B.S., D.D.S., M.P.H. (Mich.)

Third Year (513-311P)

This course consists of lectures and seminars designed to introduce students to the methods used in the assessment of health in a population. With this background in health evaluation, the student is introduced to modern approaches in the provision of community health services. Various facets of dental health care delivery are discussed. (Text - David F. Striffler, *The Dentist, His Practice, and His Community).*

6.19 HISTORY OF THE DENTAL PROFESSION

Professor
- J.W. Stamm, D.D.S.(Alta.), D.D.P.H., M.Sc.D.(Tor.), F.R.C.D.(C), Dip.A.B.D.P.H.

First Year (590-112P)

The course emphasizes the development of dentistry as a profession. While a brief review of the state of the art from earliest civilization to 1800 is undertaken, the major focus of the course is on the developments, particularly in North America, which entail the growth of the formal professional structure of dentistry. Whenever possible, parallels are drawn to current professional preoccupations.

6.20 DENTAL ETHICS AND JURISPRUDENCE

Assistant Professor
- P. Graham, B.A., B.C.L.(McG.)

Fourth Year (590-412P)

A discussion of the Dental Code of Ethics, the Dental Act, the Health Act, and other laws governing the practice of dentistry.

The responsibility of the dentist under the laws of the Province and his position as defendant in suits for damages, as plaintiff in suits for fees and as expert witness in cases between other parties and his use of techniques for identification from dental remains are explained through the analysis of various specific cases. Legal and taxation aspects of the business arrangements of dental practice are also considered. (Text - Harvey Sarner, *Dental Jurisprudence).*

6.21 NUTRITION

Lecturers
- K.E.L. Watson-Jarvis, B.H.Ec.(U.B.C.), M.N.S.(Cornell). *(Course Co-ordinator);*
- B. Shatenstein, B.Sc.(McG.), M.Sc.(Mtl.)

Second Year (590-227P)

This course consists of lectures and discussion on nutrition and diet as they affect both systemic and oral health. The emphasis is on nutritional status assessment and diet counselling with particular reference to dental health. (Text —

Abraham E. Nizel, *Nutrition in Preventive Dentistry; Science and Practice).*

6.22 PRACTICE ADMINISTRATION

Lecturer
- A. Toeman, D.D.S.(McG.) *(Course Co-ordinator)*

Fourth Year (590-417P)

A study of the orderly arrangement and administration of all the useful facilities and services needed for a professional practice, based on needs demands, regulations, system, analysis, psychology and common sense in dealing with people.

It is concerned with all the functions of the dental office which are not part of operative, technical or diagnostic procedures. (Text – Robert K. Stinaff, *Dental Practice Administration;* H.C. Kilpatrick, *Work Simplification in Dental Practice)*

6.23 PREVENTIVE DENTISTRY

Professor
- J.W. Stamm, D.D.S.(Alta.), D.D.P.H., M.Sc.D.(Tor.), F.R.C.D.(C), Dip. A.B.D.P.H.

Assistant Professor
- D.C. Clark, B.S., D.D.S., M.P.H.(Mich.)

Second Year (590-228P)

This course consists of lectures to give a scientific understanding of the initiation and progression of the major dental diseases. In addition, the student is introduced to the most important clinical techniques and agents which are used in the prevention of these diseases. Included is a look at the current and future research in this field. (Texts – *The Dental Clinics of North America, October, 1972;* Ernest Newburn, editor, *Fluorides and Dental Caries;* Simon Katz, James L. McDonald, George K. Stookey, *Preventive Dentistry in Action.)*

6.24 STATISTICS

Professor
- J.W. Stamm, D.D.S.(Alta.), D.D.P.H., M.Sc.D.(Tor.), F.R.C.D.(C), Dip. A.B.D.P.H.

First Year (590-126P)

This course consists of an introduction to the principles of descriptive and inferential statistics as applied to dental science. The course stresses the proper collection, tabulation and presentation of data. In addition, it is intended to familiarize the student with those statistical concepts which will help in the interpretation of dental professional literature. (Text – Olive Jean Dunn, *Basic Statistics: A Primer for the Biomedical Sciences).*

DEPARTMENT OF ORAL BIOLOGY

6.25 ANATOMY

Professors
- Y. Clermont, B.Sc.(Montr.), Ph.D.(McG.) (Chairman)
  P.K. Lala, M.D., Ph.D. (Calcutta)
- C.P. Leblond, M.D.(Paris), Ph.D.(Montr.), D.Sc.(Sorbonne)
- D.G. Osmond, B.Sc., M.B.Ch.B., D.Sc.(Brist.)
- H. Warshawsky, B.Sc.(Sir G. Wms.), M.Sc., Ph.D.(McG.)

Associate Professors
- G.C. Bennett, B.Sc.(Sir G. Wms.), M.Sc., Ph.D.(McG.)
- J.R. Brawer, B.S.(Tufts), Ph.D.(Harv.)
- E. Daniels, B.Sc.(S. Africa), M.Sc., Ph.D. (Man.)
- M. F. Lalli, M.A.(Bowling Green), Ph.D. (McG.)
- N.J. Nadler, M.D.C.M., Ph.D.(McG.)
- C.E. Smith, D.D.S., Ph.D.(McG.)
- M. Weinstock, D.D.S.(Tor.), Ph.D.(McG.)

Assistant Professor
- L. Hermo, B.A.(Loyola), M.Sc., Ph.D.(McG.); S.C. Miller, B.Sc. (Sir G. Wms.), M.Sc., Ph.D.(McG.)

HISTOLOGY

(504-112P)

A study by means of microscopes (light and electron) of the cells and tissues that compose the various parts or organs of the human body. (Texts – A.W. Ham and D.H. Cormack, *Histology,* 8th ed. Lippincott, 1979; W. Bloom and D.W. Fawcett, *A Text-book of Histology,* 10th ed.: Saunders, 1975; E.J. Reith and M.H. Ross, *Atlas of Descriptive Histology,* 3rd ed.: Harper and Row)

EMBRYOLOGY

(504-113P)

A study of the pre-natal development of the human body with emphasis on craniofacial development. (Text – K.L. Moore, *The Developing Human,* 2nd ed.: Saunders, 1977)

GENERAL HUMAN NEUROANATOMY

(504-114P)

A study of the functional organization of the central nervous system with emphasis on the inter-

nal framework of nerve pathways and cell groups that comprise the major motor, sensory and autonomic systems. (Text - M.C. Barr, *The Human Nervous System,* 2nd ed.: Harper and Row, 1974)

HEAD AND NECK ANATOMY

(504-115P)

A study of the head and neck, including a detailed dissection and emphasizing regional anatomy of special dental interest. (Texts - J.T. Aiken, G. Causey, J. Joseph and J.Z. Young, *A Manual of Human Anatomy,* Vol. 11, *Head and Neck,* 3rd ed.: Churchill Livingstone, 1976; J.C.B. Grant, *An Atlas of Anatomy,* 7th ed.: Williams and Wilkins, 1972; S.M. Friedman, *Visual Anatomy,* Vol. 1, *Head and Neck,* 1st ed. Harper and Row, 1970)

SYSTEMATIC ANATOMY

(504-117P)

This course provides a comprehensive coverage at the introductory level of the anatomy and development of the various organ systems of the human body. Laboratories include studies of prepared specimens, use of the anatomical museum and audio-visual materials. (Texts - J.E. Crouch, *Functional Human Anatomy,* 3rd, ed., Lea and Febiger, 1978)

6.26 DENTAL ANATOMY

Associate Professor
- W. D. Sanders, B.Sc.(Sir G. Wms.), D.D.S.(McG.), F.I.C.D. *(Director)*

Assistant Professors
- C.L. Moran, B.Sc., D.D.S.(McG.)
- M.D. Shizgal, B.Sc., D.D.S.(McG.)

Lecturers
- D.T. Shizgal, D.D.S.(McG.)
- A. Tekela, D.D.S.(McG.)

Faculty Lecturers
- D.R. Blair, B.Sc., D.D.S.(McG.)
- A.S. Israel, B.Sc., D.D.S.(McG.)

First Year (590-114P)

Instruction in the morphology of each of the permanent and deciduous teeth, of their intra and inter arch static contact relationships and of the role they play in the protection and maintenance of their supporting tissues.

Psychomotor skills related to this instruction are developed in the student through line drawings and waxing procedures.

An appreciation of the evolution of the human dentition is gained through comparative dental anatomy studies. (Texts - Wheeler, *Textbook of Dental Anatomy and Physiology,* 4th ed., Saunders.)

6.27 BIOCHEMISTRY

Professors
- R.M. Johnstone, B.Sc., Ph.D.(McG.) *(Chairman)*
- E.A. Hosein, B.Sc., M.Sc., Ph.D.(McG.) *(Course Coordinator)*

First Year (507-113P)

An outline of the general subject of biochemistry with a more special knowledge of such aspects which relate particularly to the science and practice of dentistry. One or two lectures per week. (Texts - McGilvery, *Biochemistry-A Functional Approach,* 2nd ed., Saunders; E.P. Lazzari, *Dental Chemistry;* Lea and Febiger.)

6.28 BIOMATERIAL SCIENCES

Faculty Lecturer
- C. Eriksson, B.Sc., M.Sc., Ph.D.(Lond.)

First Year (590-129P)

Introduction to basic physical and chemical properties of dental materials. Emphasis is on those materials involved in casting and fabrication of fixed dental protheses.

Second Year (590-229P)

Presentation in greater detail of the physical and mechanical properties as well as chemical and structural features of clinical dental materials. (Texts - R.W. Phillips, Skinner; *Science of Dental Materials,* 7th Edition; Peyton and Craig, *Restorative Dental Materials,* 5th ed.)

6.29 MICROBIOLOGY AND IMMUNOLOGY

Associate Professor
- E.C.S. Chan, B.A., M.A.(Texas), Ph.D. (Maryland) *(Course Co-ordinator)*

First Year (528-113P)

Basic microbiology (36 hours of lectures) (Text - *Elements of Microbiology;* Pelczar and Chan; McGraw Hill).

6.30 ORAL BIOLOGY

6.30.1 Biochemistry (590-230P)

Professor
- E.A. Hosein, B.Sc., M.Sc., Ph.D. (McG.) *(Course Co-ordinator)*

This course consists of a series of lectures and laboratory periods illustrating the biochemical processes occuring in the oral cavity. Integration of recent research papers provides for class discussion of relevant topics under current investigation.

6.30.2 Histology (590-231P)

Associate Professor
- C.E. Smith, D.D.S., Ph.D.(McG.) *(Course Co-ordinator)*

This course consists of a detailed study of the structure and development of the teeth and their supporting soft tissues. Emphasis is placed on the microscopic structure of the hard tissues of the tooth as well as the controversies concerning their mode of formation.

6.30.3 Microbiology (590-132P)

Associate Professor
- E.C.S. Chan, B.A., M.A.(Texas), Ph.D. (Maryland) *(Course Co-ordinator)*

The course is designed to give a comprehensive view of Microbiology but with special emphasis on the application to dental science. The morphology, cultural and physical characteristics of infectious agents, the theories concerning the etiology and pathogenesis as well as some epidemiological background of bacterial, fungal and viral infections seen in the oral cavity are presented. (Text — *Oral Microbiology and Infectious Disease,* student, (2nd) edition; G.W. Burnett and G.S. Schuster; Williams and Wilkins)

6.30.4 Physiology (590-233P)

Associate Professor
- P.B. Noble, B.Sc. (Edin.), Ph.D. (W. Ont.) *(Course Co-ordinator)*

This course consists of a series of lectures pertaining to aspects of human physiology which are relevant to the normal and pathological processes taking place in the oral cavity. A critical appraisal of research methodology is stressed where necessary.

6.31 PATHOLOGY, GENERAL

Professor
- J.B. Richardson, B.Sc., M.D., C.M., Ph.D. (McG.), F.R.C.P.(C) *(Chairman)*

Associate Professor
- T.P. McCrory, B.A., B.Sc.(Sir G. Wms.), D.D.S.(McG.), M.S. (Georgetown)

Assistant Professor
- G. Berry, B.A., B.Sc.(St.F.X.), M.D.(Dal.)

Second Year (546-216P)

A course in general pathology principles and processes with an immediate correlation to and integration of oral pathology.

6.32 PATHOLOGY, ORAL

Associate Professor
- T.P. McCrory, B.A., B.Sc.(Sir G. Wms.), D.D.S.(McG.), M.S. (Georgetown) *(Director)*

Second Year (590-217P)

This course is closely integrated with the course in Pathology. It attempts to correlate the principles presented in general pathology with the signs and symptoms of oral disease. It deals with the nature of disease affecting the oral regions, through study of their causes, processes and effects, together with the associated alterations of oral structure and function. The objective is to present the oral pathology necessary for quality care by the general practitioner.

In the second half of the year, clinical sessions are used to complement the lectures. These sessions are spent in the diagnosis areas of the dental departments of the Montreal Children's Hospital and the Montreal General Hospital, examining and discussing patients who present with a variety of oral and systemic diseases. (Texts - Shafer, Hine and Levy, *Oral Pathology; Saunders; Color Atlas of Oral Pathology;* Lippincott; J.D. Spouge, *Oral Pathology;* Mosby.)

6.33 PHARMACOLOGY AND THERAPEUTICS

Professors
- R.I. Ogilvie, M.D. (Tor.), F.R.C.P.(C), *(Chairman)*
- B.G. Benfey, M.D. (Hamburg), Dip. Chem. (Gottingen) *(Course Co-ordinator)*
- J. Lowenthal, B.Sc., M.Sc., Ph.D.(Montr.)

Associate Professors
- N.R. Eade, B.Sc., M.Sc.(Sask.), D.Phil. (Oxon), M.D., C.M.(McG.)
- B. Esplin, M.D.(Warsaw)
- D.R. Varma, M.B., B.S., M.D. (Lucknow), Ph.D. (McG.)

Assistant Professor
- H.S. Katz, B.Sc., M.Sc., Ph.D., D.D.S. (McG.)

Second Year (549-219P)

A course of 41 lectures, given twice weekly, concerned with the basic principles of the actions of drugs and applied therapeutics where indicated. (Texts - Neidle, Kroeger, Yagiela and Smudski, *Pharmacology and Therapeutics for Dentistry;* Gilman, Goodman, Gilman, Mayer and Melmon, *Goodman and Gilman's The Pharmacological Basis of Therapeutics).*

6.34 PHARMACOLOGY AND THERAPEUTICS, DENTAL

Professor
- K.C. Bentley, D.D.S., M.D., C.M. (McG.), Cert. Oral Surg. (N.Y.U.-Bellevue), F.I.C.D., F.A.C.D.

Assistant Professor
- H.S. Katz, B.Sc., M.Sc., Ph.D., D.D.S. (McG.) *(Course Co-ordinator)*

Guest Lecturer
- E. Goldenberg, B.Sc., D.D.S. (McG.)

Third Year (590-319P)

A study of those drugs that have special application to dental practice is presented by means of lectures. Lectures and seminars reviewing various pathological conditions and possible therapy are presented. (Texts - Andres Goth, *Medical Pharmacology,* Mosby, 10th ed. 1980; *Compendium of Pharmaceuticals and Specialties,* 15th ed. 1981)

6.35 PHYSIOLOGY

Associate Professor
- P.B. Noble, B.Sc.(Edin.), Ph.D.(W. Ont.) *(Course Coordinator)*

First Year (552-116P)

An introductory course in human physiology comprising of study in aspects of blood, cardiovascular, respiratory, digestive, endocrinological, immunological, and central nervous systems. Two hours per week. (Textbook - Vander, *Human Physiology,* 3rd ed., McGraw-Hill)

7 COURSES OFFERED IN THE FACULTY OF GRADUATE STUDIES AND RESEARCH

All students who are registered in Graduate Programs in the Faculty of Dentistry, McGill University, and who are not already registered with the Order, **must** register with the Order of Dentists of Québec. This registration fee is $25.00. Further information may be obtained from the Registrar of the Order of Dentists of Québec, 3565 Berri Street Suite 200, Montreal, PQ H2L 4G3.

7.1 MASTER OF SCIENCE PROSTHODONTICS

Professor
- H. Rosen, B.Sc., D.D.S.(McG.), F.I.C.D., F.A.C.D. *(Director)*

Associate Professors
- N. Dibai, D.D.S.(Tehran), M.S. (Ohio)
- R.F. Harvey, D.D.S.(McG.), F.R.C.D.(C), F.A.C.D., F.I.C.D.
- D.W. Henry, B.A. (Bishop's), D.D.S.(McG.), F.I.C.D.
- D. Kepron, B.Sc.(Man.), D.D.S.(McG.), M.Sc.(Mich.), F.R.C.D.(C)
- B. Sedlezky, B.Sc., D.D.S.(McG.), F.I.C.D., F.R.C.D.(C).

Lecturer
- J. Valiquette, D.D.S., (Montr.), F.R.C.D.(C)

Members of the Divisions of Endodontics, Operative Dentistry, Oral Surgery, Orthodontics, Pathology and Diagnosis, Periodontics, Pharmacology and Therapeutics, Fixed and Removable Prosthodontics.

Admission is restricted to candidates who hold a D.D.S. or equivalent degree with good standing from an approved institution. Preference will be given to those applicants who have been in general practice or rotating internships for at least one year. Disciplines involved are: Advanced Operative Dentistry, Fixed Prosthodontics, Maxillofacial Prosthesis, Removable Prosthodontics as well as supportive and allied clinical sciences. The course will consist of didactic lectures, case presentation seminars, treatment of clinical cases, under supervision, reports on clinical cases, teaching assistantship, selected office visits. Candidates will be required to attend pertinent basic science lectures. A research project must begin by the end of the first year and continue through the second year resulting in a Master's thesis upon completion of the program.

Duration: At least twenty-six months beginning July 1.

One candidate is accepted each year.

Tuition (Approximate): $570.00 for the first year
$285.00 for the second year

Equipment Rental: $150.00

Information for financial support may be obtained by writing to the Director of the course.

Course not offered in 1982-83

7.2 MASTER OF SCIENCE (ORAL and MAXILLOFACIAL SURGERY)

Professor
- K.C. Bentley, D.D.S., M.D., C.M.(McG.), Cert. Oral Surg. (N.Y.U.-Bellevue), F.I.C.D., F.A.C.D. *(Director)*

Associate Professors
- J.J. McCarthy, B.Sc.(St.F.X.), D.D.S. (McG.), F.R.C.D.(C), F.I.C.D.
- E.P. Millar, D.D.S.(McG.), F.R.C.D.(C), F.I.C.D. *(Associate Director)*

Assistant Professors
- J.R. Emery, D.D.S., M.Sc.(McG.)
- T.W. Head, B.Sc. (Sir G. Wms.), D.D.S., M.Sc.(McG.)
- D.S. Shapiro, B.A., D.D.S.(McG.), M.S.(Iowa)

Faculty Lecturer
- J. Sherman, D.D.S. (McG.)

A residency training program in Oral and Maxillofacial Surgery has been developed to pro-

vide students with a comprehensive background for the practice of Oral Surgery as a specialty.

During the three years of the program the candidate will serve as a resident at the Montreal General Hospital. During this time the resident will be given increasing responsibility for the care of in-patients and out-patients, as well as being required to fulfill certain basic science courses and other assignments. Candidates for this program must possess a D.D.S. or D.M.D. degree or its equivalent, and be acceptable to the Order of Dentists of Québec as a training candidate in a hospital. A research project must be commenced in the second year of the program and continued throughout the third year, followed by a Master's thesis.

Duration: Three academic years commencing July 1. Applications must be submitted by *September 30.*

Further information may be obtained by writing to Dr. K. C. Bentley, Director, Graduate Program in Oral and Maxillofacial Surgery, Dental Clinic, Montreal General Hospital, 1650 Cedar Avenue, Montreal, PQ. H3G 1A4.

The program is open to one candidate per year.

Tuition (approximate):
$570.00 for each of the first two years
$285.00 for each additional year

Information for financial support for these courses may be obtained by writing to the Director of the program.

8 CONTINUING DENTAL EDUCATION

Associate Professor
- M.D. Rennert, B.Sc., D.D.S. (McG.), M.S. (Buf.), F.R.C.D.(C), F.I.C.D. *(Director)*

CREDIT COURSES

At periodic intervals, the Faculty, along with other established bodies in the health field, sponsors courses in Continuing Dental Education which are recognized for Continuing Dental Education credits by dental licensing bodies.

Generally the Faculty offers a series of limited enrolment courses in various clinical and basic sciences related to dentistry. In most cases, the courses are designed to meet the needs of general practitioners, to keep them abreast of current concepts and practices and to make them aware of recent advances in dental science.

Enquiries should be directed to:

Director of Continuing Education
Faculty of Dentistry
McGill University
740 Docteur Penfield
Montreal, PQ H3A 1A4

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The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees, schedules and the revision or cancellation of particular courses.

Legal Deposit II 82

CALENDAR FOR SESSION 1982-83

1982

May 3, Mon. to Aug. 27, Fri.	Summer Session. Consult Summer Session Calendar for additional information.
May 24, Mon.	Victoria Day. Administrative offices closed.
June 1, Tues.	Lectures begin for Summer Session courses starting in June.
June 24, Thurs.	La Fête Nationale du Québec. Administrative offices will be closed (unless changed by legislation).
July 1, Thurs.	Dominion Day. Administrative offices will be closed (unless changed by legislation).
July 5, Mon.	Lectures begin for Summer Session courses starting in July.
Aug. 2, Mon.	Lectures begin for Summer Session courses starting in August.
Aug. 3, Tues. to Aug. 13, Fri.	Supplemental Examination Period
Aug. 13, Fri.	Deadline for applications for Special, Visiting and Inter-Faculty transfer students for admission in September.
Sept. 3, Fri.	Pre-registration counselling for B.Ed. U3 Physical Education students.
Sept. 6, Mon.	Labour Day. Administrative offices closed.
Sept. 7, Tues.	Pre-registration counselling for B.Ed. U2 and U3 Elementary and Diploma in Education Elementary students.
Sept. 7, Tues.	Pre-registration counselling for B.Ed. U1 and U2 Secondary and Special Areas Students.
Sept. 8, Wed.	Pre-registration counselling for B.Ed. U1 Elementary Students.
Sept. 8, Wed.	Pre-registration counselling for B.Ed. U3 Secondary, Special Areas and Diploma in Education Secondary students.
Sept. 8, Wed.	Pre-registration counselling for B.Ed. U2 Physical Education students.
Sept. 9, Thurs.	Pre-registration counselling for B.Ed. U1 Physical Education students.
Sept. 9, Thurs.	Registration for B.Ed. and Diploma in Education programs.
Sept. 13, Mon.	Lectures begin in B.Ed. and Diploma in Education programs.
Sept. 16, Thurs.	Late registration.
Sept. 24, Fri.	Last day for course changes.
Oct. 11, Mon.	Thanksgiving Day. Administrative offices closed. Lectures cancelled.
Oct. 14, Thurs.	Last day for withdrawal from A courses.
Nov.	Fall Convocation.
Dec. 3, Fri.	Last day of lectures in B.Ed. Elementary (all years) and Diploma in Education Elementary, B.Ed. Secondary and Special Areas (U1 and U2) programs.
Dec. 13, Mon. to Dec. 23, Thurs.	Examinations in A courses and Class Tests in D courses.
Dec. 10, Fri.	Last day of lectures for B.Ed. U3 Secondary and Special Areas and Diploma in Education Secondary program.
Dec. 25, Sat.	Christmas Day. Administrative offices will be closed from Dec. 24, Fri., 5.00 p.m. until Jan. 3, Mon. 9.00 a.m.

1983

Jan. 5, Wed.	Lectures begin in all programs.
Jan. 6, Thurs.	Winter term registration for new students in B.Ed. programs.
Jan. 21, Fri.	Last day for B (Winter Term) course changes.
Feb. 4, Fri.	Mid-Term holiday. Lectures cancelled.
Feb. 18, Fri.	Last day for withdrawal from B courses.
Feb. 24, Thurs. and Feb. 25, Fri.	Study break. Administrative offices will be open.
April 1, Fri. April 4, Mon.	Easter. Administrative offices closed.
April 8, Fri.	Last day of lectures in B.Ed. Elementary and B.Ed. Secondary and Special Areas, U1, U2, U3 and Diploma in Education Secondary programs.
April 14, Thurs. April 29, Fri.	Examination Period.
April 29, Fri.	Last day of lectures in Diploma in Education Elementary program.
May 2, Mon. May 27, Fri.	Field Experience in Diploma in Education Elementary program.
May 23, Mon.	Victoria Day. Administrative offices closed.
June	Convocations.

1 STAFF

1.1 ADMINISTRATIVE OFFICERS

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JOHN ARMOUR, AACCA **Vice-Principal (Administration and Finance)**

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Vice-Principal (Macdonald Campus)

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MICHAEL HERSCHORN, M.A., Ph.D. (McG.)
Dean of Students

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Chairman, Department of Early Childhood and Elementary Education

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BURPEE, Peter G., B.Sc., M.Ed.(McG.)
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BUTEAU, Magdelhayne F., B.A., B.Ed., M.A., Lic. Sc. Soc., Lic. Ped.(Montr.), Ph.D.(McG.)
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Professor

EISEMON, Thomas O., B.A.(Hiram Coll.), M.A., Ph.D.(Wis.) **Associate Professor**

EMERY, Winston G., B.Ed., M.A.(McG.)
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FLOCH, Wolfgang J., B.A.(U.B.C.), M.Ed., Ed.D.(Tor.) **Associate Professor**

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FRANCOEUR, Pearl, B.Sc.(Sir G. Wms.), M.Sc., M.Ed.(McG.) **Associate Professor**

FRANCOEUR, Thomas A., B.A. Lic. Ped. D.Ed. (Montr.), M.A.(Ott.), Dipl. Past Theol. (Lumen Vitae, Brussels) **Professor**

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MacDOUGALL, James C., B.Sc., Ph.D. (McG.)
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MACONOCHIE, A. Kennedy, M.A.(Edin.)
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Professor

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NEMIROFF, Stanley B.Sc., M.A.(McG.)
Associate Professor

NICHOL, Dorothy A., B.Sc.(P.E.) (McG.), M.Sc.(P.E.), (Syr.) **Associate Professor**

NIXON, Martha E., B.Ed., M.Ed.(McG.)
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Chairman, Department of Secondary Education

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PARE, Donald D., B.A., M.A.(Gonzaga), B.Th. (Regis Col.), M.Sc.(Fordham), Ph.D. (Florida)
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REBUFFOT, Jacques J., B. ès L., L. ès. L., D.E.S., (Aix-Marseilles), Dip. I.E.P., Dr. 3rd Cy. (Strasbourg) **Associate Professor**
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WILKINSON, Robert E., B.Sc.(P.E.)(McG.), M.A. (Col.), D.P.E.(Springfield) **Professor**

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WOLFORTH, John R., B.Sc.(Sheff.), M.A., Ph.D. (U.B.C.) **Associate Professor**

YOUNG, John E.M., B.A.(McM.), B.Ed. M.Ed. (Sask.), Ph.D.(Tor.) **Professor**

HISTORICAL NOTE

The Faculty of Education traces its beginnings back to 1857 when the McGill Normal School was established at McGill by agreement between the University and the Government of Québec. In 1907, it was re-named the School for Teachers and was moved to Ste. Anne de Bellevue where it became part of Macdonald College.

At this time also, the Macdonald Chair of Education was endowed at McGill University and a Department of Education was created in the Faculty of Arts and Science for the purpose of preparing candidates for the High School Diploma. In 1930, the first graduate program was inaugurated, an M.A. (Education), and later, in 1953, the University established the B.Ed. degree.

In 1955 the School for Teachers and the Department of Education were combined to become, within the Faculty of Arts and Science, the In-

stitute of Education. To these were joined, in 1957, the McGill School of Physical Education (founded in 1912).

In 1965, the Institute was reconstituted as the Faculty of Education and the work continued both on the McGill and the Macdonald campus.

Finally, in 1970, the St. Joseph Teachers College and the Faculty of Education were amalgamated and relocated in a new building on the McGill Campus.

At the present time, the Faculty offers a wide variety of programs and courses for degree and diploma students and for graduate studies. In service programs are also offered throughout the province.

2 GENERAL INFORMATION

2.1 General Regulations

THE ACADEMIC YEAR

McGill's academic year is made up of two sessions, the fall/winter or regular session and the summer session. These are subdivided, where appropriate, into the fall term (September to December), the winter term (January to May) and Spring term (April to June) and the two parts of the summer session (mid-May to end of June and early July to mid-August).

ATTENDANCE

The pattern of attendance necessary to satisfy the requirements of course work will vary according to the nature of different subjects and the professors' approaches to them. A course constitutes a contractual and social obligation between the professor and the student. It is, therefore, the responsibility of the professor to make students aware of the unique requirements of a course and the manner in which they may be fulfilled, and the responsibility of the student to meet these requirements.

(The intention of the foregoing is to avoid the imposition of arbitrary and artificial attendance regulations. The absence of restrictions implies confidence in the maintenance of a state of good will, mutual trust and common sense among the parties concerned.)

STUDENT CATEGORIES AND COURSE LOADS

Full-time students

Full-time students in the B.Ed. programs in Satisfactory standing take a minimum of 12 credits per term.

Full-time students in Probationary standing take a maximum of 12 credits per term to which they may add a repeated course in which a grade of "D" was originally obtained. Students who have a grade point average of 3.0 or higher may add to the normal load of 15 credits per term by enrolling in up to 18 credits per term.

Part-time students

Part-time students take fewer than 12 credits per term.

Special Students

A special student takes regular credit courses, but is not working towards a degree or diploma. To qualify for this status a student must have a specific approved plan of study. Applications must be made at the Office of the Director of Teacher Education.

Visiting Students

A visiting student is one who is taking courses at McGill for credit at another university. Applications must be made at the Office of the Director of Teacher Education.

EXAMINATIONS

Students may write term papers and their answers to examinations in English or French, except in the cases of certain language, literature, and professional courses.

Members of the teaching staff may from time to time give interim class tests if they think necessary.

Final Examinations

Final examinations are held during an examination period following the term in which the course is given. In some courses there is no final examination; standing in these courses is determined on the basis of term work and class tests.

Instructors are not permitted to grant any special treatment regarding examinations to any student. If students believe there is some circumstance which might be legitimately taken into account in evaluating their performance, they should apply to the Director of Teacher Education.

Supplemental Examinations

There is a supplemental examination period during the month of August. Students may receive permission to write supplemental examinations in courses in which they obtained a D or an F. It should be noted that supplemental examinations are not necessarily available in all courses and that in fact no supplemental examinations are offered in Art, Music, Second Languages and Student Teaching. It is the students' responsibility to determine this by checking with the instructor, and to avail themselves of this privilege at the time of the next supplemental examination

period. Supplemental results will not erase the D or F originally obtained which was used in calculating the GPA. Both the original mark and the supplemental result will be calculated in the CGPA (i.e. the taking of supplemental examination has the same effect on a student's GPA as does repeating the course). Written application to write a supplemental examination must be received at the office of the Associate Dean (Educational Services). Special permission is required if a student wishes to write supplementals totalling more than 6 credits. A fee of $10.00 for each supplemental paper is payable to the cashier as soon as the application has been approved. Students who do not intend to write the supplemental for which they are registered should officially withdraw, otherwise a grade of "J" (Absent) will be recorded ("J" counts as an F in CGPA calculations).

In certain cases, students may be permitted to write one supplemental examination during the April-May examination period in a first term course in which they have obtained a D or an F, if the course is also given in the second term. No attempt is made to avoid conflict between this supplemental and the student's required final examinations, and in the case of such a timetable conflict the student will be required to write the final examination and postpone the supplemental to the August period.

Depending on the course, the supplemental result may or may not include the same proportion of class work as did the original grade. Instructors will announce the arrangements to be used for their courses early in the term.

Deferred Examinations

A student who, for reasons such as illness or family affliction, has been unable to write one or more examinations, may receive permission to write deferred examinations in their stead which will normally be written in the next supplemental examination period. The Associate Dean's office must be informed within one week of the examination of the reasons for absences. An "L" will appear on the Report of Standing in place of a grade in such courses, and will be replaced by the grade obtained in the deferred examination after it has been written.

REASSESSMENT OF A GRADE

Papers are marked and grades calculated and handled with considerable care. However, if students wish to have their marks checked or their examination papers re-read, they should apply in writing to the Office of the Associate Dean (Educational Services). There is a fee of ten dollars which will be refunded if an error is found in the student's favour. If the result is a lower mark, the lower mark will stand and there will be no refund. Requests for reassessment of standing in more than one course will not be permitted.

Any request to have a term paper reassessed must be made directly to the professor concerned.

INCOMPLETE COURSES

If, in the instructor's opinion, there is sufficient reason to permit a delay in the submission of required term work, an extension of deadline of up to four months after the end of the course may be granted the student. In this case, the instructor will submit a grade of "K" (incomplete). If a new grade is submitted within the deadline by the instructor, this will appear on the student's Faculty reports and verification forms following the K and will replace the K on the student's official transcript.

If the required work is not completed before the deadline the grade of KF will be recorded in the same way as the grade above. (KF denotes a failed course and has the same effect on the GPA as an F.)

In exceptional circumstances, and with the approval of the Director of Teacher Education the four month deadline may be extended further, in which case the grade of K* will appear.

Students who have not, without accepted excuse, participated or written the final examination in a course for which they were registered may be given a grade of J (absent).

STUDENT TEACHING

Satisfactory progress in the student's program is a pre-requisite for placement in the major student teaching experience.

If students are evaluated as unsatisfactory in field experiences they will be required to withdraw from the Faculty.

Supplemental examinations are not available in Student Teaching.

Students who, for reasons such as illness or family affliction, are unable to attend their school, must immediately inform the Student Teaching Office at 392-8830.

In semesters in which there is a major field experience students should budget approximately $100 for travel expenses.

DRESS REGULATIONS

There are no specific dress regulations in force in the Faculty of Education but all students enrolled in Teacher Certification programs are advised that Regional School Boards and individual schools may have regulations concerning acceptable attire. Students are advised to adhere to any such regulations.

LANGUAGE REQUIREMENT

One of the Government requirements for teacher certification in the Province of Québec is a fluent command of the language of instruction. Education students who cannot demonstrate this fluency cannot be recommended for certification and will be required to withdraw from the Faculty. Ap-

plicants are reminded that the usual language of instruction at McGill is English. Candidates must therefore possess a good functional knowledge of English before commencing their studies. Candidates whose first language is not English may be required to take written and oral tests in English before being admitted.

COURSE CHANGES

Students wishing to make changes to the courses for which they are registered (dropping a course, adding a course, or changing a section) must do so through the Office of Teacher Education. Such changes should not introduce conflicts in the timetable nor destroy the required sequence of courses approved by the student's adviser.

Students must obtain the approval of the instructor and their adviser before adding courses. The Faculty offering the course sets deadlines for changes.

WITHDRAWAL FROM COURSE

Withdrawal from a course after the change of course period may be allowed by the Director of Teacher Education up to the date specified in the Faculty announcement. Students who have not officially withdrawn from courses they are no longer attending will have a failing grade ('J') recorded at the end of the session.

WITHDRAWAL FROM THE UNIVERSITY

The responsibility for initiating withdrawal rests solely with the student. Neither notification of the course instructors nor discontinuance of class attendance will suffice. A student who wishes to withdraw officially from the University during the academic year must secure permission from the Office of the Director of Teacher Education. The appropriate form will be supplied. Students considering withdrawal are strongly urged to consult their adviser before making a final decision. **Fees for the term in which the student withdraws are refundable according to the regulations set out in the *General Announcement.*** The student ID card must be attached to the withdrawal form.

READMISSION

Students who have withdrawn from the Faculty or who have not re-registered for a term or more must make application in writing to the Director of Teacher Education to be readmitted, stating reasons for their absence from the university.

Students who withdrew because of illness should provide some indication that they are ready to resume studies.

2.2 Academic Standing and Grading

B.Ed. PROGRAMS

A cumulative grade point average (CGPA) will be calculated comprising the student's entire record at McGill in a degree program.

GRADING SYSTEM

Courses are graded either by letter or in numerical marks, but the official grade in each course is the letter grade.

The letter grades and their numerical equivalents are as follows:

Letter Grades	Grade Points	Numerical Marks
A	4.0	85-100
A–	3.7	80-84
B+	3.3	75-79
B	3.0	70-74
B–	2.7	65-69
C+	2.3	60-64
C	2.0	55-59
D	1.0	50-54
F (Fail)	0	0-49

SATISFACTORY STANDING

A student enters the University in satisfactory standing and remains in this standing unless the GPA for any year drops below 2.0.

Students in Bachelor of Education programs (Elementary, Secondary and Special Areas) must obtain a C grade or better in all courses except free electives.

To be in satisfactory standing a student must also pass student teaching and field experience courses.

PROBATIONARY STANDING

A student whose GPA drops to between 1.5 and 1.99, is placed in probationary standing.

A student in probationary standing must return to satisfactory standing within one year by obtaining a GPA of 2.5 or CGPA of 2.0, otherwise the student will be placed in unsatisfactory standing.

PROBATIONARY STANDING

(Part-time students in B.Ed. for Certified Teachers and B.Ed (Vocational) Programs).

After the completion of 12 credits, a student whose GPA falls between 1.5 and 1.99 is placed in probationary standing.

A student in probationary standing must return to satisfactory standing by the end of the next 12 credits; otherwise the student will be placed in unsatisfactory standing.

UNSATISFACTORY STANDING

A GPA of less than 1.5 or a failure in student teaching places a student in unsatisfactory standing.

Students in unsatisfactory standing must withdraw. Students required to withdraw because of a GPA of less than 1.5 may apply for readmission on probationary standing by appealing to the Committee on Student Standing. Students in unsatisfactory standing for the second time cannot apply for readmission.

Students in unsatisfactory standing because of failures in student teaching may appeal to the Committee on Student Standing. Supplementals are not offered in student teaching or field experience courses.

SUMMER SCHOOL CREDITS

Students wishing to enrol in Summer School courses at McGill or elsewhere and who wish to have credits earned count towards their degree, must obtain the permission of the Director of Teacher Education in advance and, if the course is taken elsewhere than at McGill, must arrange to have an official transcript of marks forwarded to the Office of the Director of Teacher Education.

For regulations governing permissible course loads in summer session, please see *Summer Session Announcement.*

TRANSFER CREDITS

N.B. Credit in courses for which the lowest passing grade was received is not transferable.

Bachelor of Education Programs

Credit may be granted by the Faculty of Education for courses taken at recognized universities other than McGill but not more than 30 credits of this type will be allowed towards the B.Ed. degree. Students seeking advanced standing upon admission should clearly indicate on their Application Forms which course they wish to have considered for this purpose. Students already enrolled in the program must obtain approval from the Director of Teacher Education before embarking on such courses. Normally, such transfer credits should be taken in the early part of the degree program. Students should note that the actual marks or grades achieved in transfer-credit courses are not included in CGPA calculations.

B.Ed. For Certified Teachers and B.Ed. (Vocational) Programs.

Teachers enrolled in this program may transfer up to 30 credits from a recognized university or from another McGill program.

GRADUATION REQUIREMENTS

To be eligible for a degree, a student must have accumulated 90 approved course credits (i.e. passed courses whose credit total is 90), obtained a C grade or better in the teaching option(s) and related method(s) courses, and have a CGPA of at least 2.0.

A student must remain in a position to complete the degree requirements within five years of admission to a 90-credit program; otherwise the student reverts to unsatisfactory standing.

Students registered in the B.Ed. for Certified Teachers are allowed a maximum of 12 years in order to meet degree requirements.

The student must complete Faculty and program requirements in order to graduate. It is the responsibility of the student to ensure that all requirements are met before graduation. All students should check with their adviser or program director early in the graduating year if they have any questions about whether they will meet program requirements by graduation time.

It is essential that students indicate the expected date of graduation on the registration form in the final year, and verify the date on verification forms. The office of the Student Records Coordinator should be notified immediately when a final year student changes the expected date of graduation.

McGILL DIPLOMA IN EDUCATION PROGRAMS

PASS STANDING

Students in the Diploma in Education programs (Elementary, Secondary and Special Areas) must obtain a C grade or better in all courses.

FAILED STANDING

A student who obtains the grade of D or F in more than two courses fails the year. A student who receives an unsatisfactory standing in Student Teaching fails the year.

SUPPLEMENTAL PRIVILEGES

A student may be permitted to write a maximum of two supplemental examinations in order to meet the criteria for a clear pass. In courses not evaluated by examination, a supplemental examination is not usually available. In such cases, it may be necessary for the student to repeat the course or to meet such other requirements as the Committee on Student Standing may propose.

Supplementals are not available in student teaching.

TRANSFER CREDITS

McGill Diploma in Education Programs

Transfer credit in these programs is not normally possible because of the Provincial requirement to complete a full-year of studies for purposes of certification and salary classification. However,

students who can show proof of having taken equivalent courses over and above the requirements for their Degree should apply for credit transfer in the first instance to the Director of Teacher Education.

PROGRAMS OF PROFESSIONAL DEVELOPMENT

Diploma in Educational Administration
Diploma in College Teaching
Diploma in Human Relations and Family Life Education
Diploma in the Psychology and Education of the Gifted
Certificate in Diagnostic and Remedial Mathematics
Certificate in Educational Media
Certificate in Moral and Religious Education
Certificate in Native and Northern Education
Certificate in Reading Instruction
Certificate in Second Language Teaching
Certificate in Social Studies Education
Certificate in Special Education
Kindergarten Program

Satisfactory completion of the 30 credit or 45 credit program will qualify the student to apply for the appropriate Certificate or Diploma. However, in cases where a Diploma is issued by the Québec Ministry of Education the student must also meet the prerequisite qualifications as determined by the Ministry of Education.

TIME LIMITS

30-credit programs taken on a part-time basis must normally be completed within five years of admission to the program. Programs taken on a full-time basis must normally be completed within 28 months of admission to the program.

STUDENT TEACHING (PRACTICUMS)

In programs where there is a compulsory practicum (field experience/student teaching) a satisfactory Pass ('P') is required. If a student fails this component of the program the student will be required to withdraw from the program, but may appeal for readmission to the Committee on Student Standing. Satisfactory progress in the student's course work is a pre-requisite for placement in the Practicum.

GRADING

Students are required to obtain a 'C' grade or higher in all compulsory core subjects and may not include more than one 'D' grade (not exceeding 4 credits) in the elective courses. Students who obtain no more than two 'D' or 'F' grades (not exceeding 8 credits) may be permitted to write supplemental examinations if they are offered and/or repeat the course. Students may repeat failed courses only once. Failures and inadmissible 'D' grades must normally be made up within 16 months of terminating the original course.

TRANSFER CREDITS

Transfer credit in these programs is not normally advisable because of the Provincial requirement to complete 30 credits of study for scolarité purposes. However, when transfer credit is appropriate students should first obtain the recommendation of the Program Director concerned.

NOTE: Faculty Regulations lie within the jurisdiction of the Faculty Committee on Student Standing. Inquiries concerning their meaning or application should be addressed to the Chairman of the Committee.

2.3 Registration

Registration takes place early in September for students entering in September and early in January for those entering at that time. Information for the use of newly admitted students is sent with the letter of admission, and is specified on the Report of Standing for returning students eligible to re-register. In addition, during the weeks prior to registration, all students will receive from the faculty additional information about pre registration counselling.

Students must come to the specified place for registration at the appropriate time, and must bring with then the following:

- Report of Standing (if the student is returning in satisfactory or probationary standing) or letter of readmission.
- Student I.D. card
- Approved study plan form

New students:

- Letter of admission
- Approved study plan form

LATE REGISTRATION

There will be late registration days for those unable to register at the stipulated times in September and January. There will be a late registration fee of $50.

2.4 Fees and other Expenses

The University reserves the right to make changes without notice in the published scale of fees.

Fees are not refundable, except under special conditions. See "Regulations Concerning Withdrawal" below.

Tuition fees are based on a per credit charge where applicable and on the basis of equivalences where the credit system does not apply. The basic charge for tuition fees is $19 per credit or $145 per credit for foreign students and this fee will include all the regular charges of the University for registration, tuition, laboratories

and libraries. Student Service Fees and Students' Societies Fees are separately assessed and are added to the total fees payable.

Students will be assessed according to the credit system. With a fee of $19 per credit, a student taking a normal academic load of 30 credits will pay $570 (30 X $19) for tuition plus fees for Student Services and Students' Societies. Students taking more or less than the normal 30 credit load will be assessed fees on a pro rata basis. Thus, a B.Ed. student enrolled in only 24 credits will pay $456 (24 X $19) for tuition plus the normal fees for Student Services and Students' Societies. A B.Ed. student with permission to accelerate and enrolled in 36 credits will pay $684 (36 X $19) for tuition plus normal fees for Student Services and Students' Societies.

SCHEDULE OF FEES

Per credit tuition fee	$ 19
Per credit tuition fee – foreign students	$145
Student Services	$ 95
Student Societies	$ 46*

*Students in the Diploma in Education program pay an additional $15 fee for membership in the Post-Graduate Students' Society. Graduate students pay Students' Societies fee according to the schedule in the *General Announcement.*

SPECIAL FEES AND PENALTIES

Application for Admission	$15
Late Registration	$50
Application for Graduation Fee	$25
Rereading examination paper or reassessment of grade	$10
Supplemental examination (each paper)	$10

Additional information regarding Special Fees and Penalties may be found in the *General Announcement.*

PART-TIME, SPECIAL AND VISITING STUDENTS

Where the credit system is applicable $19 per credit or $145 per credit for foreign students for tuition will be assessed. Otherwise the tuition fee will be $114 per full course or $870 per full course for foreign students and $57 per half course or $435 per half course for foreign students.

In addition, the following fees will be assessed **per term:**

a)If taking 9 credits and over:
Student Services.....$47.50
Students' Societies.....$23.00

b)If taking 6.5 to 8.5 credits:
Student Services.....$25.25*
Students' Societies.....$ 7.95

c)If taking 3.5 to 6 credits:
Student Services.....$15.75*
Students' Societies.....$ 7.95

d)If taking 3 credits or less:
Student Services.....$ 9.50*
Student Societies.....$ 7.95

*Excludes use of Athletics facilities. An extra payment of $21.25 per term may be made if use of these facilities is desired. This can be arranged at the Department of Athletics or the Dean of Students' Office.

REGULATIONS FOR PAYMENT OF FEES

Students entering the University for the first time and those returning in Graduate Studies are required to pay their fees either by mail or in person at the Accounting Office within 10 days after registration. For students registering in September the second instalment is due by January 15.

Returning students from the previous year (except in Graduate Studies) must pay one half of the total required fee by mail or in person to the Accounting Office before August 23, otherwise they will not be permitted to register. Instructions for paying fees in advance will be mailed to all returning students, either with their Sessional Reports of Standing or a short time later. Students who have been notified by the University of the award of a scholarship, bursary or student loan, and who require this award for payment of the first instalment of fees, must obtain permission to delay payment of fees from the Student Aid Office.

The second instalment is due by January 15. A late payment fee is charged for payment after the specified dates.

LATE REGISTRATION

Students registering late must pay their fees at the time of registration, failing which they become subject to the late payment fee and the provisions of the following paragraph.

Transcripts of records, diplomas and permission to re-register will be withheld if tuition fees as well as outstanding residence fees, library fines or other charges are not paid by the prescribed dates.

REGULATIONS CONCERNING WITHDRAWAL

A student who wishes to withdraw from the University or from certain courses must secure the permission of the Director of Teacher Education. The Office of the Director of Teacher Education will supply the necessary form which must be completed and submitted. As the Student ID card is the property of the University, students withdrawing from all their courses must attach their Student Identify Card to the withdrawal form. *Students considering withdrawal are strongly advised to consult their Advisers before making a final decision.* **Fees for the term in which the student withdraws are refundable under conditions outlined in the *General Announcement.***

PHYSICAL EDUCATION STUDENTS

An additional fee is charged to cover part of the costs of the Outdoor Education Course. Those students who elect curling or skiing are also required to pay additional fees.

BOOKS

Students should expect to spend about $150 a session for prescribed textbooks and for classroom and laboratory supplies, all of which may be purchased from the McGill University Bookstore at 1001 Sherbrooke St. W.

TRAVELLING EXPENSES

Students enrolled in programs leading to Québec Teacher Certification are required to participate in student-teaching and/or internship in the schools. Although every effort will be made to place a student within reasonable travelling distance, this cannot be guaranteed in every case. Students are responsible for any travelling expenses which may be incurred.

BOARD AND RESIDENCE

See *General Annnouncement.*

ENTRANCE SCHOLARSHIPS

In general, the University's system of entrance scholarships is designed to enable good students from all parts of Canada to attend McGill. The policy of the University is to recognize and honour scholarship, and the University Scholarships Committee selects scholarship winners from among those students who have obtained or who expect to obtain a first class academic standing. See the *Undergraduate Scholarships and Awards Announcement* for further details.

AWARDS TO STUDENTS IN COURSE

See *Undergraduate Scholarships and Awards Announcement.*

FINANCIAL AID

Information concerning all matters relating to financial assistance whether University, Provincial or Federal, may be obtained from the Student Aid and Foreign Student Adviser's Office. This office also deals with all matters which may affect non-Canadian students.

Location: 3637 Peel Street
General Information: 392-5256

2.5 Health and Counselling Services

UNIVERSITY HEALTH SERVICE

Location: 3637 Peel Street
Appointment and General Office: 392-5441
Mental Health Service: 392-5449

When students enrol at McGill University they have available to them a full range of medical service provided by the McGill University Health Service. Medical clinics operate daily, five days a week from 9:00 a.m. – 5:00 p.m. A physician is always on call at night and on weekends and can be contacted by dialing the Health Service number. There are both male and female physicians on staff as well as a competent staff of college health nurses.

The service is available to all full-time students, undergraduate and post-graduate and part-time students who pay Student Services fees. Students are asked to bring their Medicare cards or equivalent. All information is completely confidential and forms no part of any University record.

Please refer to the *General Announcement* for further details.

OFFICE OF THE DEAN OF STUDENTS

The Dean of Students is responsible for all student services. The Office of the Dean of Students maintains an "open-door" policy and students are invited to drop by either with or without an appointment.

This Office also acts as the coordinating centre for any special support services necessary for a student with a temporary or permanent physical disability.

Location: 3637 Peel Street
General Information: 392-5364

STUDENT COUNSELLING SERVICE

The Service provides a place where students of all faculties may discuss any problem confidentially. Among the services offered are individual and group therapy, awareness groups, human relations training, marital and sexual therapy, psychological assessment, vocational testing, effective reading courses, educational and career planning and the Educational and Career Information Library.

Location: 3637 Peel Street
General Information: 392-5119
Hours: 9:00 a.m. – 5:00 p.m.

EDUCATION COUNSELLING CENTRE

Location: Room B-133
Faculty of Education
3700 McTavish Street
Telephone: 392-8881

Open between the hours of 9:00 a.m. – 5:00 p.m. weekdays or in the evenings by special appointment.

The Department of Educational Psychology and Counselling at McGill University provides free counselling services at their Counselling Centre. These services include educational and vocational counselling, counselling for social

adjustment and emotional problems, group counselling, testing, and referral to other agencies.

The policy of the Counselling Centre is directed toward providing a place for individuals to discuss their vocational, personal, and educational problems in a confidential, understanding atmosphere. The director and staff have the belief that any concern that one may have is worth listening to and discussing.

2.6 Centre for Teaching and Learning Services

The Centre is an independent University unit having the overall goal of helping to improve learning and teaching in higher education. Most of its academic staff are cross-appointed in the Faculty of Education. In addition to its service role to faculty and the University, the Centre can accommodate a small number of graduate students interested in making use of the Centre as a unique site for research in instructional development, evaluation, and educational innovation. Such arrangements are most often made through programs in Educational Psychology, but have been possible through other programs as well.

The Centre is located in the Macdonald Harrington Building, Room 407. For more information please telephone 392-8320.

2.7 Miscellaneous

CERTIFIED TRANSCRIPTS OF STUDENT'S RECORD

Transcripts of academic results may be procured from the Registrar's Office on application. The charge for this service, which is payable in advance, is $2.25 for the first copy and 75 cents for each additional copy ordered at the same time.

QUEBEC TEACHER CERTIFICATION

Teacher Certification in Canada is a Provincial responsibility. McGill University offers approved programs which the Government of Québec accepts for initial Teacher Certification.

These programs are:

McGill Diploma in Education
Bachelor of Education

Upon satisfactory completion of one of the approved programs, the Government issues a "Permit to Teach" showing the level and area of concentration. This "Permit to Teach" is normally valid for five years. Holders of such a permit requiring a permanent Teaching Diploma valid in Québec must complete two years of satisfactory teaching in Québec during the validity of the Permit. Holders of such a Permit or of a permanent Diploma wishing to teach in another Province or in another country must apply directly to the Teacher Certification Agency in the revelant Province or Country. Similarly, teachers from other Provinces or Countries who wish to teach in Québec must apply to the competent authorities in Québec.

Service de la Certification, de la classification,
et de la probation des maîtres.
Complex "G"
1035 rue de la Chevrotière
Québec, P.Q. G1R 5A5.

In order to be eligible for a "Permit to Teach" candidates must be either Canadian Citizens, or Landed Immigrants, or must possess a Work Permit. To be eligible for a permanent Québec Diploma it is necessary to be a Canadian Citizen.

In addition to meeting these requirements, candidates for Teacher Certification must be recommended by McGill University in each of the following areas:

1. Adjustment of the personality for teaching
2. Command of the language of instruction
3. Theoretical knowledge in the field of psychopedagogy
4. Aptitude as a classroom practitioner
5. Academic competency in the area of concentration
6. Understanding of the Québec educational system

Regulation No. 4 of the Québec Department of Education "Respecting the Permit and the Licence to Teach" was approved by an Order-in-Council Number 592, March 30, 1966, and is reproduced below:

1. Authorization to teach at the levels of study governed by the regulations of the Minister of Education shall be awarded by the Minister and shall first be in the form of a permit to teach and later in the form of a licence to teach.
2. The permit to teach shall be awarded to every candidate who, after the thirteenth year of study or its equivalent, has successfully completed an approved training program at a recognized institution.
   The duration and the nature of this program shall vary according to the level and the area of teaching selected by the candidate.
   However, this program shall include, at the minimum, one year of the equivalent of psychology, teaching methods and classroom practice.
3. The permit shall be valid for a period of five years. It shall confer the right to teach during any two of these five years in an institution recognized for the purposes of the present regulation. Under exceptional circumstances, this right may be extended for one year.
4. The licence to teach shall be awarded to the

holder of a permit who, having taught for two years in accordance with section 3, is deemed competent.

LIBRARY AND CURRICULUM LABORATORY

The Education Library, located on the first floor of the Faculty of Education Building, has a collection of approximately 260,000 books, journals, microfilm and microfiche on Education and related subjects, as well as books on subjects taught in schools. The Curriculum Laboratory, entered via the Library, has about 30,000 items including school text books, a collection of children's literature and audio-visual materials such as film strips, video tapes, overhead transparencies, records, cassette tapes, kits, and pictures. There is an audio-visual area with equipment for previewing, recordingand listening.

There is a Physical Education library in the Currie Gymnasium stocking books and journals on games, calisthenics, health and other related topics.

EDUCATION LIBRARY HOURS

Monday to Thursday	(8.30 a.m. – 9.00 p.m.)
Friday	(8.30 a.m. – 5.00 p.m.)
Saturday	(9.00 a.m. – 1.00 p.m.)

CURRICULUM LABORATORY

Monday	(9.00 a.m. – 5.00 p.m.)
Tuesday to Thursday	(9.00 a.m. – 9.00 p.m.)
Friday	(9.00 a.m. – 5.00 p.m.)
Saturday	(9.00 a.m. – 1.00 p.m.)

PHYSICAL EDUCATION

Monday to Friday	(9.00 a.m. – 12.00 p.m.) (1.00 p.m. – 5.00 p.m.)

Education students may use the main McLennan Library, the Redpath Undergraduate Library as well as other McGill branch libraries. However hours may differ, in different libraries.

EDUCATIONAL MEDIA CENTRE

The Educational Media Centre, situated on the first floor of the Faculty of Education building, serves both students and staff in their requirements for media services, facilities and instruction within the Faculty of Education. Service functions include: equipment maintenance and distribution; preparation of instructional materials; video recording; sound recording; consultation. The following facilities are provided: self-instructional lab; media work lab; sound room; video room; preview room and darkroom. Instructional functions comprise small group media workshops; equipment operation instruction; and consultation. The Centre also conducts research into media effects, utilization and evaluation.

READING CENTRE

The McGill Reading Centre is a training facility for the Faculty of Education programs in Reading Education. It is located in room 244N of the Faculty of Education building. From October to March and during the summer session, the Centre serves the general community as a referral, diagnostic and remedial education facility. The Centre also provides college-level speed and study skills courses for McGill students. School personnel are welcomed as visitors. Visitation to schools for consulting on programs or specific problems may also be available.

During the summer, the Reading Centre operates reading instruction programs in local schools. Information may be obtained by calling 392-8888.

STUDENT PLACEMENT – CANADA EMPLOYMENT CENTRE

Location: 3637 Peel Street
Telephone: 283-4411

The student Placement Office, in cooperation with the School Boards wishing to participate, arranges for the distribution of application forms for teaching posts and also schedules an Interview Day, usually in April, when School Boards may interview prospective Education graduates. The office also distributes Registration Forms for the Québec Teacher Placement Bureau. A number of School Boards regularly inform the Placement Office of teaching vacancies. All potential and recent graduates are encouraged to make full use of the centre's services.

THE McGILL JOURNAL OF EDUCATION

The McGill Journal of Education is published three times a year, in Winter, Spring, and Fall. Subscriptions for one year are $13.50, and are obtainable from the office of the Journal in Room 342, 3700 McTavish Street, Montreal H3A 1Y2.

The Journal aims to reach both academics and non-academics. It is concerned about major issues in education from a variety of perspectives, practical and theoretical, personal and collective. Its policies are to bring the understanding of scholars before a wider audience also actively engaged in education, whether as parents, teachers, or administrators. The Journal tries to be interesting and readable, without conceding anything in the way of academic standards in the accuracy of its information or the quality of its judgments.

EDUCATION UNDERGRADUATE SOCIETY

The Education Undergraduate Society office is located beside the cafeteria, in room B185. The Society is the students' voice within the faculty and its primary purpose is to serve and to inform the students. It also attempts unification of students through sponsorship of activities, such as:

the tutoring program (students
teaching in under-privileged areas)
Teachers' Convention
conference participation
intramural athletics
speakers' program
new student orientation

and many more. The Ed.U.S. also serves as a liaison between students and faculty members, as well as between Education students and the McGill Students' Society. Students are encouraged to participate and to make their opinions known. Drop by B185 or call 392-4448.

STUDENT SERVICES

For information on additional Student Services and extra-curricular activities see *General Announcement* available from the Registrar's Office.

3 PROGRAMS OFFERED AND ADMISSION REQUIREMENTS

The Faculty of Education offers a wide variety of programs leading to professional careers in the fields of elementary and secondary education. In addition, the Faculty offers a number of part-time or in-service programs for certified teachers who wish to upgrade their qualifications or add areas of specialization. Through the Faculty of Graduate Studies and Research, the Faculty of Education offers graduate degree programs designed primarily for educators who wish to study further in their area of competence or to obtain professional and academic qualifications in advanced fields of educational theory and practice.

All of these programs meet provincial standards in regard to teacher classification (Regulation #5) and, when applicable, meet current certification requirements of the Ministry of Education, Province of Québec (Regulation #4). Successful candidates eligible to teach in Québec are recommended to the Ministry of Education by the University for provincial certification.

Fluency in one of the official languages of Canada (English or French) is a requirement for all candidates seeking provincial teacher certification; candidates who cannot demonstrate this fluency cannot be recommended for certification and will be required to withdraw from the Faculty. In addition, all applicants are reminded that the normal language of instruction at McGill is English. Students may write term papers and final examinations in French, but a good functional knowledge of English is necessary before commencing a program and is essential for success. Applicants whose mother tongue is a language other than English will be required to have their oral and written ability evaluated before submitting an application. Candidates who intend to seek employment in schools in the Montreal area are advised that French-immersion programs have recently grown in popularity in some school boards and that ability to teach fluently in both English and French is a decided advantage.

Admission to most programs offered by the Faculty is selective and better than average grades are normally required. A high academic average does not, however, necessarily ensure admission. The Faculty recognizes that academic factors are only meaningful when considered within the broader perspective provided by all of the application materials. Letters of reference can provide important qualitative evidence concerning an applicant's background and potential; they are reviewed carefully by the Admissions Committee. In addition, the Faculty recognizes that experience gained outside of the normal academic milieu may have contributed valuable motivational and personal dimensions not necessarily known to others. Any applicant who believes that these experiences have been of value in this way is invited to append a personal statement to the application form.

3.1 Programs of Teacher Education
BACHELOR OF EDUCATION

(90 Credit, Full-Time Programs)

The Bachelor of Education programs are designed primarily for students who have completed a CEGEP program and have obtained the Diploma of Collegial Studies and who wish to qualify as teachers at the elementary and/or secondary level. The program is normally completed during three years of full-time study and combines academic courses in the area of concentration, professional courses related to the teaching area and appropriate field experiences within the elementary or secondary schools of the Province. There are no specified pre-requisite courses required for admission but candidates are advised to include courses relevant to their proposed teaching areas.

Ontario Grade XIII candidates may apply if they have an average of 65% or better in five appropriate Grade XIII subjects. Candidates from Commonwealth countries with three G.C.E. "A" level subjects with grades of C or better are also eligible to apply.

Other overseas students are encouraged to apply if they have certificates equivalent to those outlined above. Such applicants should refer to the *General Announcement* and are advised to

write directly to the Admission Office for an evaluation of their qualifications.

Candidates with Grade XII qualifications or with good grades in five appropriate G.C.E. "O" levels plus one full year of formal schooling beyond "O" level in a suitable academic program at a recognized school or college are eligible to apply for a program requiring the completion of 120 credits (normally four years of study).

Residents of Canada who are 23 years of age or older and who lack the academic background normally required for admission may apply for entrance as mature students.

Applications should be made to:

Admissions Office
McGill University
845 Sherbrooke St. West
Montreal, PQ, H3A 2T5, Canada

Applications for admission to the fall semester should be received before March 1, and for the winter semester before November 1.

Note 1. Applicants applying for B.Ed. programs in Elementary Education, Home Economics, Physical Education, French and English (Second Languages), Modern Languages and Jewish Studies are required to arrange interviews with the departments concerned prior to admission.

Note 2. Applicants who possess qualifications at university-level beyond the minimum required for admission may apply for transfer credit and advanced standing. Such requests must be clearly indicated on the application form. Retroactive credit after admission will not normally be considered.

Note 3. A wide range of courses enabling students either to acquire prerequisite credits or to earn credit towards their degree is offered in the Summer Session. Students wishing to attend the Summer Session at McGill University should contact the Summer Session Office for further information and the appropriate registration forms (address: 845 Sherbrooke St. W., Montreal, PQ H3A 2T5).

Note 4. Inter-Faculty transfer students should apply before August 10 to the office of the Director of Teacher Education, Faculty of Education, 3700 McTavish Street, Montreal, PQ. H3A 1Y2.

BACHELOR OF EDUCATION

(Home Economics)

Students who elect to follow a major program in Home Economics are required to enrol in courses offered in the School of Food Science for the first four semesters.

Applicants for this program should apply before March 1 to:

School of Food Science
Macdonald College Campus of McGill University
Ste. Anne de Bellevue, P.Q.
H9X 1C0.

BACHELOR OF EDUCATION

(Vocational Education)

This program is available to candidates wishing to qualify as teachers of Vocational Education. Requirements for the Québec teaching permit in vocational education are met following one year of full-time professional study, which constitutes the first year of the degree program. Normally to be admitted, a candidate must possess a Diploma of Collegial Studies, or its equivalent, which should include training in the trade, business, or professional area corresponding to the subject the candidate wishes to teach in secondary school. Appropriate work experience is also required.

Candidates who do not meet the DCS or equivalent requirement may qualify for admission as mature students, provided they are residents of Canada and at least 23 years of age.

Applicants for the B.Ed. (Vocational Education) should apply before June 1 to:

Director of Teacher Education
Faculty of Education
McGill University
3700 McTavish Street
Montreal, P.Q. H3A 1Y2

DIPLOMA IN EDUCATION

(One Year, Full-time Program For University Graduates)

This Diploma program requires one full-time year of professional studies. Recognized by the Government of Québec, it is designed to prepare university graduates for a teaching career in elementary or secondary education. Eligible candidates are recommended to the Québec Ministry of Education by the University for provincial teacher certification.

The two programs at the Elementary level (Later Childhood and Elementary French) are unique in that each candidate is required to enroll in an internship which takes place in an elementary school.

Potential high school teachers are provided with programs preparing them to teach one or two subjects at the secondary level. With the one exception of Physical Education the Faculty offers the whole range of both academic and vocational courses taught in Québec High Schools. All programs provide for students to spend up to eight weeks full-time in high school settings and in this way each student is given the opportunity

to integrate theory with practice in a realistic setting. The Diploma programs at the secondary level have also provided valuable training and experience to those graduates with Master's or Doctoral degrees seeking employment in CEGEP, Community or Junior Colleges.

The Diploma programs, at either Elementary or Secondary level, provide candidates with teacher certification, one of the normal prerequisites for admission to most graduate programs in Education.

The admission requirements are:

1) a university degree or its equivalent, prior to admission
2) a second class standing in the degree (i.e. a B average or a CGPA of 3.0)
3) a major, with a minimum of 36 credits in one subject taught in the elementary or secondary schools of the Province of Québec, or two minors, in two subjects, with a minimum of 18 credits in each. Candidates who do not have these prerequisites may be advised to take qualifying summer courses prior to admission.

Applications should be made before March 1 to:

Director of Teacher Education
Faculty of Education
3700 McTavish Street
Montreal, P.Q. H3A 1Y2

Elementary: Later Childhood

Candidates whose degrees do not contain the exact concentration of courses as outlined above may be considered for admission if:

1) they have a high standard of scholarship;
2) their degrees include a range of courses in subjects normally taught in elementary schools;
3) their letters of reference and personal statement show evidence of relevant experience or high potential as elementary school teachers.

Elementary French

In addition to the requirements for all Elementary candidates as outlined above, all applicants will be assessed in their oral and written competence in the French language.

Secondary Art (Available only as a single teaching option)

Candidates must possess a degree of Bachelor of Fine Arts, or equivalent, in which studio work formed the major part of the program. Candidates are required to present a portfolio of their work and to arrange for an interview with a member of the Department usually during the month of April.

Secondary English

Candidates should normally have taken 36 credits in English from those offered in Departments of English, or 18 credits in English and 18 credits in another teachable subject. Courses in linguistics, drama, and film are also recognized. For candidates who have graduated from a four-year B.A. degree program, a required first-year course in English may not be included in order to achieve the requisite number of courses. Candidates with special experience in English outside academic course work should arrange for an interview with the Department of Secondary Education if they are otherwise short of requirements.

Candidates should note that "English" and "English as a Second Language" are two different options. Those interested in the latter option should refer to the section below headed "Secondary Second Languages."

Secondary Social Studies

a) Geography: The normal requirement of 36 credits in geography or 18 credits in geography and 18 credits in another teachable subject is applicable. Candidates should have courses in both physical and human geography and, preferably, one course in Cartography.
b) History: The normal requirement applies as for geography above, but candidates should have at least 6 credits in Canadian history and 6 credits in European history.
c) Economics: Candidates must have the normal requirement of 36 credits in Economics, or 18 credits in Economics and 18 credits in another teachable subject.
d) Social Studies: Candidates may elect Social Studies as one of their teaching options but, in addition, they must have the qualifications to be admitted into a second teaching area. Their degree must show an acceptable sequence of courses in at least one social science discipline, e.g., political science, economics, anthropology, or sociology.

Secondary Mathematics

Candidates seeking to teach only mathematics at secondary level must possess the normal requirement of 36 credits in university level mathematics or 18 credits in Mathematics and 18 credits in another teachable subject, provided that there has been no undue emphasis in one particular area, e.g. four courses in statistics.

Secondary Science

(Biology, Chemistry, Physics, General Science)

Candidates for the Secondary Biology, Chemistry and physics options must possess appropriate prerequisites at the college level (or equivalent) as well as a minimum of 18 university-level credits in the discipline concerned. Candidates for the General Science option must have some college level (or equivalent) background in science as well as 18 university-level credits in science. Preference will be given to candidates

who have taken courses over and above these minimum requirements. All candidates must have the qualifications to be admitted to two subjects: either two science subjects or one science subject and one other secondary level subject.

Secondary Religious Studies

(Catholic, Protestant)

a) Catholic available as either one subject in which case 36 credits in Theology are required or as one of two subjects in which case 18 credits in Theology are required.
b) Protestant: available only as one of two subjects. A minimum of 18 credits in Religion is required, plus 18 credits in another teachable subject.

Jewish Studies

This program is available only as one subject but certification is for Religion at both Elementary and Secondary levels. Candidates must possess an appropriate university degree and appropriate background in Hebrew and/or Yiddish, Biblical literature, customs, etc. Candidates are required to arrange for an interview with a member of the Department prior to admission.

Second Languages

(French, English)

For candidates choosing either French or English as a second language as a single option, the normal requirement of a minimum of 36 credits, including at least 30 credits in literature and 6 credits in linguistics, is applicable. Certification is for a second language at both elementary and secondary levels. All candidates will be assessed on their oral and written competence in the language they wish to teach. Assessment sessions will be held in the Spring prior to admission.

Secondary Second Languages

(French, English, Italian, German, Spanish, Latin)

For candidates choosing either a second language or modern languages as one of two teaching options, 18 credits in literature and linguistics plus 18 credits in the other teaching subjects are required.

All candidates will be assessed on their oral and written competence in the language(s) they wish to teach. Assessment sessions will be held in the spring prior to admission. The options available are:-

a) French as a Second Language: candidates are reminded that in addition to oral and written competence in French they will also be required to take some courses given in the English language.
b) English as a Second Language is offered as a single teaching option leading to certification at both the Elementary and Secondary level. A functional knowledge of French would prove useful to those who plan to teach English as a Second Language.
c) Modern Languages (German, Italian, Spanish): candidates are reminded that in addition to oral and written competence in the language(s) they wish to teach they will also be required to possess a good functional knowledge of English. This option is available only as one of two teaching options.
d) Latin: candidates interested in this option should contact the Chairman of the Department of Education in Second Languages of the Faculty of Education before submitting an application.

Secondary Home Economics

Candidates must possess a university degree in Home Economics or an acceptable equivalent.

The candidate's transcript should contain appropriate courses in at least three of the areas of the secondary school curriculum in Home Economics and at least some courses in the remaining areas. The Québec Secondary School Curriculum in Home Economics has the following areas – Foods and Nutrition, Family Living, Housing and Design, Consumer Education and Clothing and Textiles.

Secondary Vocational Education (Business or Technical)

The candidates must possess a recognized university degree, or its equivalent, in appropriate subjects, plus adequate related work experience. Each candidate's credentials will be individually evaluated to ensure that they meet the requirements with respect to academic background and work experience. This will be followed by an interview to further determine the candidate's suitability for admission to this program. All interested applicants should contact the office of the Director of Teacher Education, Faculty of Education, 3700 McTavish Street, Montreal, PQ, H3A 1Y2.

Music

Candidates must possess a Bachelor of Music in School Music or its equivalent. Certification is for Music at both Elementary and Secondary levels and thus students are required to undertake course work and student teaching at both elementary and secondary levels.

3.2 Programs of Professional Development

During the summer months as well as in the evenings of the fall, winter and spring terms, the Faculty of Education offers a selected number of programs designed for teachers who are interested in pursuing further studies.

The following programs of professional development are offered by the Faculty:

DEPARTMENT OF ELEMENTARY EDUCATION:
- Bachelor of Education for Certified Teachers
- Certificate in the Diagnostic and Remedial Teaching of Mathematics
- Certificate in Native and Northern Education
- Certificate in Reading Instruction (Reading Centre)
- Certificate in Social Studies Education
- Program for Kindergarten Teachers

DEPARTMENT OF SECONDARY EDUCATION:
- Bachelor of Education (Vocational Education)

DEPARTMENT OF EDUCATION IN THE ARTS:
- Certificate in the Teaching of the Arts (Subject to Senate approval)

DEPARTMENT OF RELIGION AND PHILOSOPHY IN EDUCATION:
- Certificate in Moral and Religious Education

DEPARTMENT OF EDUCATION IN SECOND LANGUAGES:
- Certificate in Second Language Teaching

DEPARTMENT OF ADMINISTRATION AND POLICY STUDIES IN EDUCATION:
- Diploma in Educational Administration

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY AND COUNSELLING:
- Diploma in College Teaching
- Diploma in the Education and Psychology of the Gifted
- Diploma in Human Relations and Family Life Education
- Certificate in Educational Media
- Certificate in Special Education

For announcements outlining courses offered during the various sessions and for information regarding registration procedures, fees, etc., contact:

Office of Continuing Education
Faculty of Education
McGill University
3700 McTavish
Montreal, PQ, H3A 1Y2
(514) 392-4757

or

McGill Summer Session
F. Cyril James Building
845 Sherbrooke St. West
Montreal, PQ, H3A 2T5
(514) 392-6740

Unless otherwise directed, for admission to all the following part-time programs apply to:

Office of Continuing Education

Applications and admission to these programs are processed at all times during the academic year and the summer months.

PROVINCIAL RECOGNITION OF PROGRAMS

1. *All* the Programs of Professional Development for teachers described above are recognized by the Ministry of Education of Québec for the purposes of classification. (Regulation #5).
2. Qualified candidates who complete the 30 credit program requirements in Kindergarten, Reading Instruction, Second Language Teaching, Special Education will be recommended to the Ministry of Education for a teaching diploma in that field.

3.3 Graduate Degree Programs

(M.Ed., M.A., D.Ed., Ph.D.) Through the Faculty of Graduate Studies and Research, the University offers a number of graduate degrees in Education. Many of these programs may be taken through full-time or part-time study in the evenings and Saturday mornings, and/or during the Summer Session.

The M.A. degree provides opportunities for suitably qualified students to deepen their knowledge and to gain some facility in research in a major area of education. At present the areas in which students may elect to specialize are Educational Administration, Comparative Education, Educational Psychology, Counselling, Physical Education, History of Education and Philosophy of Education. Students complete their degree by presenting a thesis in the area of their specialization.

The structure of the M.Ed. degree is different since its purpose is to enable candidates to gain added competence in a professional field, e.g., in the teaching of a specific school subject or in counselling, administration, educational psychology, elementary education, special education or reading. The courses leading to M.Ed. degrees in teaching subjects such as mathematics or geography are taken partly in the subject department concerned and partly in the Faculty of Education. There is no formal thesis in the M.Ed. degree programs but students may submit a paper or project report as part of their work, or, in some cases, they may have a period of internship.

M.Ed. degrees are currently available in:
Counselling
Educational Psychology
Educational Administration
Elementary Education
Special Education
Teaching of Reading
" " Art
" " Chemistry
" " Biology
" " Home Economics
" " Geography
" " History
" " Mathematics
" " Physics
" " French as a Second Language
" " English as a Second Language

(Other Teaching Subjects may be offered if demand so warrants).

The Faculty has one formal doctoral program. This is a professional degree in Counselling which is intended to enable selected students who have already attained the level of the M.Ed. in Counselling to continue their studies in breadth and depth and to carry out a significant inquiry to be reported as a doctoral thesis.

At present the Faculty of Education does not offer a formal program leading to a Ph.D. However, under the Regulation set out in paragraph 21 of the *Announcement of the Faculty of Graduate Studies and Research* it is possible for exceptionally well qualified candidates to proceed to the degree of Ph.D. by making direct application to the Dean of the Faculty of Graduate Studies and Research. Such candidates should have a very clear idea at the outset of the area of their prospective research. Currently the Departments of Educational Psychology and Counselling, Administration and Policy Studies in Education and Early Childhood and Elementary Education (Reading) have doctoral students under this provision. A Ph.D. in Educational Psychology is awaiting government approval.

Undergraduates looking ahead to graduate study in Education are reminded that entrance requirements vary with the program. Because some graduate programs require a certain undergraduate course profile, interested students are urged to examine the graduate calendar in Education for precise entrance requirements.

The admission requirements for most M.A. and M.Ed. programs are that candidates must hold an undergraduate degree from a recognized university, with a grade-point average of 3.0 or better and a concentration in the proposed field of study. A Permanent Québec Teaching Diploma, or its equivalent, is also required. However, teacher certification requirements may be waived for candidates applying for M.A. programs in History of Education, Philosophy of Education, Physical Education, Comparative Education, Educational Psychology, and for the M.A. and M.Ed. in Counselling. Candidates are advised that the awarding of a Master's degree does not certify them to teach in the Québec public schools.

For the D.Ed. degree in Counselling, candidates must hold the degree of M.Ed. in Counselling of McGill University, or its equivalent, and have maintained a good second class standing in the degree. In addition, applicants must supply certain personal and educational data, take certain tests, and submit to an interview procedure. For candidates who do not meet all of the above requirements, courses of qualifying study may be prescribed.

Further specific requirements for particular degrees, and other information, should be sought, before an application is made, from the

Director of Graduate Studies and Research
Faculty of Education
3700 McTavish Street
Montreal, PQ H3A 1Y2
Canada

Note 1. Summer session and Winter session candidates in Counselling and Educational Administration are required to apply by March 1. Other candidates applying for admission for the first time and wishing to start in the Summer Session must apply before April 1, and those interested in commencing studies in the Fall must apply by July 3. Application is some programs will close prior to these deadlines when all places have been filled.

Note 2. Admission to graduate programs in Education in the Faculty of Graduate Studies and Research is granted by the Dean of the Graduate Faculty on the basis of undergraduate record and satisfactory professional training. Admission to the appropriate courses is granted by the individual departments of the Faculty of Education, and, where appropriate, by the departments concerned in other Faculties in consultation with the Faculty of Education.

3.4 Course Offerings: General Information

Undergraduate courses offered by the Faculty of Education in various degree, diploma, and certificate programs are listed according to the department responsible for the courses. Some courses will be available in the evenings only, through the Centre for Continuing Education.

Important: In selecting courses for their programs, students are advised to refer to the **University Timetable Guide** or, for evening courses, to the announcement of the **Centre for Continuing Education.** Those publications provide the necessary information on course schedules (session, time, place, etc.). For further assistance, consult your faculty adviser.

COURSE NUMBER

The first three digits of the course number are used to designate the department or the teaching unit from which the course originates.

The code used is as follows:

411 – Department of Administration and Policy Studies in Education
412 – Counselling courses, Department of Educational Psychology and Counselling
414 – Special Education courses. Department of Educational Psychology and Counselling
415 – Catholic Studies courses, Department of Religion and Philosophy in Education
416 – Educational Psychology courses, Department of Educational Psychology and Counselling
421 – Protestant Studies courses, Department of Religion and Philosophy in Education.
422 – Jewish Studies courses, Department of Religion and Philosophy in Education
423 – Philosophy courses, Department of Religion and Philosophy in Education
424 – Drama courses, Department of Education in the Arts
425 – Department of Secondary Education
426 – Art courses, Department of Education in the Arts
429 – Music courses, Department of Education in the Arts
431 – Department of Education in Second Languages
432 – Media courses, Department of Educational Psychology and Counselling
433 – Department of Early Childhood and Elementary Education
434 – Department of Physical Education
435 – Student teaching, observation, and field experience courses (non-departmental)
436 – Vocational education courses, technical and business. Department of Secondary Education
448 – Courses in core and Faculty programs (non-departmental)
449 – Courses in the college level program, Department of Educational Psychology and Counselling
451 – Dance courses, Department of Education in the Arts

NOTE: In the University Timetable Guide, a letter suffix is added to each course number (e.g. 411-394A) to indicate when a course is offered A = Fall semester; B = Winter semester; D = beginning in Fall and continuing through Winter semester; C and/or L = Summer Session.

CREDIT RATING

In degree programs the credits given for any course are a measure of the effort expected of the student during each week of a fifteen week period. The number of hours per week, inclusive of lectures, labs, personal study, etc., devoted to a course should normally be three times the number of credits specified.

† EDUCATION ELECTIVES

Education courses which are generally available as ELECTIVES are designed in the course list by a (†) placed beside the course number.

▲ ACADEMIC COURSES

Courses offered by the Faculty of Education which, if appropriate to the student's program, may be included in the ACADEMIC CONCENTRATION are designated in the course list by a **(▲) placed beside the course number.**

• NOT OFFERED

Courses listed with (•) beside the course number will not be offered in 1982-83.

* PENDING APPROVAL

An asterisk (*) preceding the course number indicates that such courses are pending approval.

4 EARLY CHILDHOOD AND ELEMENTARY EDUCATION (433)

Chairman: Prof. G.J. Bennett

Staff: Profs. H.D. Amoriggi, M.W. Aulls, J.G. Bradley, L. Butler-Kisber, R.L. Butt, S.H. Dobbie, R.A. Earle, M.G. Garbarini, F.P. Greene, L.H. Haworth, S.W. McNicol, C.S. Milligan, M.E. Nixon, H.N. Riggs, I.R. Robertson, J.P. Slaughter, J. Stevens, F.S. Stinson, H. Trump, L.F. Wolfe, V. Zack.

Cross-appointed: A.M. Benjamin, P.G. Burpee, M.T. Carley, J.M. Cram, A.K. Maconochie, D. Modafferi, F.G. Rejskind, J.A. White.

Department Office:
Education Building, Room 213, 217
Tel.: 392-8898, 392-8851

The Department of Early Childhood and Elementary Education offers pre-service teacher education programs in Early Childhood (ages 4-8) and Later Childhood (ages 6-11). There are two patterns: a three-year program for CEGEP graduates leading to a B.Ed. degree and a 45-credit program for university graduates leading to a McGill Diploma in Education. There is also a 45-credit program in Elementary Education, French (Second Language) given in cooperation with the

Department of Education in Second Languages. In conjunction with the Centre for Northern Studies and Research, the Department offers a certificate program in Native and Northern Education to train northern native teachers for northern schools.

In addition, the Department offers programs of professional development for teachers leading to a B.Ed. degree, and to specialized certificates in such areas as Diagnostic and Remedial Mathematics, Social Studies, and Pre-School Education.

The Reading Centre of the Department offers a certificate and an M.Ed. program in the Teaching of Reading to suitably qualified teachers. (Room 244N), Tel.: 392-8888).

At the Graduate level, the Department also provides a Master of Education program in Elementary Education. (For details, see *Faculty of Graduate Studies and Research Announcement).*

4.1 Teacher Education Programs

BACHELOR OF EDUCATION

Candidates are admitted to the degree program in Elementary Education in one of the following areas of concentration.

Early Childhood: a program dealing with preschool and the first cycle of the elementary school, leading to certification to teach children between the ages of 4 and 8.

Later Childhood: a program dealing with the six years of the elementary school, leading to certification to teach children between the ages of 6 and 11.

For both areas of concentration the program consists of 3 years of full-time study requiring the completion of 90 credits divided into the following areas:

academic courses	30 credits
professional courses	45 credits
elective courses	15 credits

Note: All first year students will be assigned an academic staff adviser with whom they will consult concerning course selection. All new students will have the opportunity for pre-registration counselling (see Calendar dates). At registration each student must present a copy of the Study Plan Form which was completed and signed by the adviser at pre-registration counselling.

Academic Courses

Academic courses are those which provide content material related to the subjects taught in elementary schools and are restricted to the following areas: Art, English, Mathematics, Music, Physical Education and Movement Education, Second Language, Science, Social Studies and Religious and Moral Education.

Professional Courses

Professional courses are those which deal with educational theory and practice. In both areas of concentration professional courses include: a minimum of 9 credits in basic education courses; a minimum of 18 credits of field work and related activities; a minimum of 18 credits in curriculum and instruction.

Electives

Electives are courses chosen by students in consultation with their academic adviser in order to fulfill perceived needs or to pursue areas of scholarly interest. Elective course sequences may be chosen in any academic of curriculum and instruction area or in educational psychology and sociology, social foundations or media.

PROGRAM PROFILE—EARLY CHILDHOOD

1. Academic courses (30 credits)

Courses selected must include the following areas:

a) English (9 credits)
b) Art, Music, Movement Education (any 9 credits)
c) Science, Social Studies, Religious and Moral Education, French (9 credits)
d) Mathematics (3 credits)

2. Professional courses (45 credits)

a) Basic Education courses
   - 448-305 Teaching and Learning (6 credits)
   - 414-209 Learning and Behaviour Difficulties of Children (3 credits)

b) Field Work
   - 435-215 Directed Observation (6 credits)
   - 435-421 Field Experience (9 credits)
   - 433-401 Curriculum Development (3 credits)

c) Curriculum and Instruction
   - 433-221 Reading and Language Arts Pt. I (3 credits)
   - 433-222 Reading and Language Arts Pt. II (3 credits)
   - 433-331 Mathematics Curriculum and Instruction (3 credits)
   - 424-326 Creative Program Skills (3 credits)

Two of the following: (no more than one per area)

i) 415-322 Guiding the Religious Response (3 credits)
   OR
   421-322 Human and Religious Values (3 credits)
ii) 433-371 Science Curriculum and Instruction (3 credits)
iii) 433-381 Social Studies Curriculum and Instruction (3 credits)
iv) 431-322 Teaching French as a Second Language (3 credits)

3. Electives (15 credits)

Courses chosen in consultation with adviser.

PROGRAM PROFILE—LATER CHILDHOOD

1. Academic courses (30 credits)

Courses selected must include the following areas:

a) English (9 credits)
b) Mathematics (3 credits)
c) Three credits each from three of the following: Social Studies, Science, Religious and Moral Education, Second Language, Art, Music, Physical Education (9 credits)
d) Any of the above (9 credits)

2. Professional courses (45 credits)

a) Basic Education courses
- 448-305 Teaching and Learning (6 credits)
- 414-209 Learning and Behaviour Difficulties of Children (3 credits)

b) Field Work
- 435-245 Directed Observation (6 credits)
- 435-431 Field Experience (9 credits)
- 433-402 Curriculum Development (3 credits)

c) Curriculum and Instruction
- 433-223 Reading and Language Arts Pt. I (3 credits)
- 433-224 Reading and Language Arts Pt. II (3 credits)
- 433-332 Mathematics Curriculum and Instruction (3 credits)

Three of the following areas: (no more than one course per area)

i) 415-332 Guiding the Religious Response (3 credits)
OR
421-332 Human and Religious Values (3 credits)

ii) 433-372 Science Curriculum and Instruction (3 credits)

iii) 433-382 Social Studies Curriculum and Instruction (3 credits)

iv) 431-332 Teaching French as a Second Language (3 credits)
OR
431-347 Teaching English as a Second Language (3 credits)

v) 426-332 Art Curriculum and Instruction (3 credits)
424-494 Improvisation and Theatre Arts (3 credits)
OR
429-332 Music Curriculum and Instruction (3 credits)
OR
434-332 Physical Education Curriculum and Instruction (3 credits)

3. Electives (15 credits)

Courses chosen in consultation with adviser.

General Notes

1. To be in satisfactory standing, students must:
   a) obtain a grade of "C" or better in all courses except electives
   b) pass student teaching and field experience courses.
2. A minimum of 12 credits must be taken outside the Faculty of Education.
3. Students must complete a minimum of 18 credits in Curriculum and Instruction and be in satisfactory standing in order to be placed for U3 Field Experience.
4. For further information remarks, standings etc., please refer to the General Announcement.

DIPLOMA IN EDUCATION

Candidates will be admitted to prepare for teaching at the Early or Later Childhood levels.

The integration of theoretical and practical dimensions of the various courses is provided through an internship in schools and through a year-long concurrent course given in the faculty by the student's adviser / supervisor.

Students are required to teach in schools one day per week first semester, three days per week second semester, followed by a one-month block during the month of May.

The course work coupled with the practicum is intensive and students are advised that the Diploma Program is demanding and should consider that five full days per week are necessary to meet the requirements.

- **EARLY CHILDHOOD (45 credits)**
  (NOT OFFERED 1982-83)

a) Basic Education courses
- 448-305 Teaching and Learning (6 credits)
- 414-209 Learning and Behaviour Difficulties of Children (3 credits)

b) Field Work
- 435-370 Directed Observation (3 credits)
- 435-421 Field Experience (9 credits)
- 433-401 Curriculum Development (3 credits)
- 435-444 Field Experience II (3 credits)

c) Curriculum and Instruction
- 433-221 Reading and Language Arts Pt. I (3 credits)
- 433-222 Reading and Language Arts Pt. II (3 credits)
- 433-331 Mathematics Curriculum and Instruction (3 credits)
- 424-326 Creative Program Skills (3 credits)

Two of the following:

i) 415-322 Guiding the Religious Response (3 credits)
OR
421-322 Human and Religious Values (3 credits)
ii) 433-371 Science Curriculum and Instruction (3 credits)
iii) 433-381 Social Studies Curriculum and Instruction (3 credits)
iv) 431-322 Teaching French as a Second Language (3 credits)

LATER CHILDHOOD (45 credits)

a) Basic Education courses
448-305 Teaching and Learning (6 credits)
414-209 Learning and Behaviour Difficulties of Children (3 credits)
b) Field Work
435-370 Directed Observation (3 credits)
435-431 Field Experience (9 credits)
433-402 Curriculum Development (3 credits)
435-444 Field Experience II (3 credits)
c) Curriculum and Instruction
433-223 Reading and Language Arts Pt. I (3 credits)
433-224 Reading and Language Arts Pt. II (3 credits)
433-332 Mathematics Curriculum and Instruction (3 credits)

Three of the Following areas:

i) 415-332 Guiding the Religious Response (3 credits)
OR
421-332 Human and Religious Values (3 credits)
ii) 433-372 Science Curriculum and Instruction (3 credits)
iii) 433-382 Social Studies Curriculum and Instruction (3 credits)
iv) 431-332 Teaching French as a Second Language (3 credits)
OR
431-347 Teaching English as a Second Language (3 credits)
OR
v) 426-332 Art Curriculum and Instruction (3 credits)
OR
424-494 Improvisation and Theatre Arts for the Classroom (3 credits)
OR
429-332 Music Curriculum and Instruction (3 credits)
OR
434-332 Physical Education Curriculum and Instruction (3 credits)

- **ELEMENTARY EDUCATION – FRENCH, SECOND LANGUAGE (45 CREDITS) (NOT OFFERED 1982-83)**

a) Basic Education Courses
448-305 Teaching and Learning (6 credits)
414-209 Learning and Behaviour Difficulties (3 credits)
b) Field Work
435-370 Directed Observation (3 credits)
435-431 Field Experience I (9 credits)
433-402 Curriculum Development (3 credits)
435-444 Field Experience II (3 credits)
c) Curriculum and Instruction
431-344 Teaching French as a Second Language (3 credits)
431-301 Linguistics Applied to Second Language Teaching (3 credits)
431-340 Animation Techniques (3 credits)
431-345 Bilingual Class I (3 credits)
433-332 Mathematics Curriculum and Instruction (3 credits)

d) One of the following:

i) 433-372 Science Curriculum and Instruction (3 credits)
433-382 Social Studies Curriculum and Instruction (3 credits)

General Notes:

A grade "C" or better is required in all compulsory professional courses. To be in satisfactory standing a student must also pass student teaching and field experience courses.

CERTIFICATE IN NATIVE AND NORTHERN EDUCATION

This 45 credit program has been developed to provide qualifications for Inuit teachers employed in the North. It is offered on a part-time basis in settlements in Northern Québec or the Eastern Artic in cooperation with participating school commissions, particularly Kativik School Board.

Admission requirements:

1. Employment as a teacher in the North.
2. A valid teaching authorization from the appropriate education authority.
3. Recommendations from a school principal, an officer of the education authority and a settlement education committee.
4. Normally be 21 years of age.
5. Fluency in Inuttitut.

Further information may be obtained from: Professor Jack Cram, Program Director.

PROGRAM PROFILE

Required Courses **39 credits**

a) Basic Education (9 credits)
433-245 Orientation to Inuit Education (3 credits)
414-211 Social and Emotional Development and Behavior (3 credits)

411-202 Educational and Administrative Institutions in the North (3 credits)

b) Field Work (18 credits)
- 414-212 Perceptual Motor Development and Teaching (3 credits)
- 433-246 Cultivating Language and Thought (3 credits)
- 433-247 Practicum in Individualized Instruction (6 credits)
- 435-422 Teaching Internship and Evaluation (6 credits)

c) Curriculum and Instruction (12 credits)
- 433-248 Reading and Writing Inuttitut (3 credits)
- 433-249 Inuttitut Orthography and Grammar (3 credits)
- 433-242 Mathematics for Inuit Children (3 credits)
- 424-242 Cultural Skills (3 credits)

Options **6 credits**

6 credits in the following areas will be offered in the North. Other courses may be followed in consultation with the Program Director.

Advanced Inuttitut Language and Culture
Teaching English as a Second Language
Basic Language (English or French)
Advanced Language (English or French)
Media in the Classroom
Community Studies
Environmental Studies
Movement Education
Creative Drama, Art, Music

On completion of the Certificate requirements, candidates may apply for admission to the B.Ed. for Certified Teachers program with up to 30 credits advanced standing. Certain non-credit academic upgrading courses may be required of B.Ed. candidates.

4.2 Programs of Professional Development

BACHELOR OF EDUCATION FOR CERTIFIED TEACHERS (ELEMENTARY EDUCATION)

This 90 credit B.Ed. degree was designed for teachers who are already certified to teach in elementary schools and who wish to upgrade their qualifications to degree status. A student must take a minimum of 60 credits in the program in order to qualify for the degree. Thus, only 30 credits from other institutions or programs may be considered as transfer credits. This program is available on a part-time basis in the summer, and in the evenings during the fall, winter and spring terms. It is available also on a full time basis.

The program combines academic courses in areas of concentration, academic and free electives, and professional courses related to educational theories and teaching strategies. Candidates may satisfy the professional requirements of the degree by following concurrently a 30 credit program in Diagnostic and Remedial Mathematics, Educational Media, Kindergarten, Moral and Religious Education, Reading Instruction, Second Language Teaching, Social Studies Education or Special Education. These programs are described below.

Admission requirements:

1. teacher training from an approved institution;
2. Diploma of Collegial Studies or equivalent;
3. an interview if opting for a concentration in Moral and Religious Education, Second Language Teaching. Special Education.
4. letter of recommendation from a competent authority;
5. a good functional knowledge of English; those whose mother tongue is not English may be required to pass a language exam.

Further information regarding the program may be obtained from the Office of Continuing Education.

PROGRAM PROFILE

Candidates enrolled in this program must complete course work within the following general pattern:

1) Thirty (30) *academic credits* in five (5) subject areas relevant to elementary education in a 12-9-3-3-3 pattern (i.e. 12 credits in one subject, 9 credits in a second subject, and 3 credits in each of three other subject areas.)

Note: Subject areas relevant to elementary education, in broad terms, are the Arts (Art, Music, Dance and Drama), English, French, General Science, Mathematics, Music, Physical Education, Religion, Social Studies.

2) Fifteen (15) credits chosen from courses which will enhance the candidate's *cultural development*. These are to be chosen in consultation with the Senior Adviser.

3) Fifteen (15) credits as *free electives* (courses selected by candidates after consultation with the Senior Adviser.)

4) Thirty (30) credits in a prescribed *education concentration.* At the present time, these are available in Diagnostic and Remedial Mathematics, Educational Media, Kindergarten, Moral and Religious Education, Reading Instruction, Second Language Teaching, Social Studies Education or Special Education, as described below.

Note: Those who do not opt for one of the Education Concentrations listed above may follow a *general option* under the guidance of the Program Director.

CERTIFICATE IN DIAGNOSTIC AND REMEDIAL TEACHING OF MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS

Elementary school students have varying abilities to abstract, generalize, reason and to recall when learning mathematics. As the initial training in most teaching programs is of a general nature, many teachers encounter difficulties when trying to diagnose the difficulties the students experience in learning mathematics. The purpose of this certificate is to offer more specialized training for elementary school teachers in diagnostic and remedial mathematics in an in-service program.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

Admission requirements:

1. Diploma of Collegial Studies or equivalent;
2. Teacher training from an approved institution;
3. Letter of recommendation from a competent authority;
4. Test of Proficiency in Mathematics.

Further information may be obtained the Office of Continuing Education.

PROGRAM PROFILE

Required Courses **24 credits**

Two of the following Background Courses (6 credits)

433-230 Background Mathematics for Elementary School Teachers (3 credits)
433-234 Background Geometry for Elementary School Teachers (3 credits)
433-433 Perspectives on Elementary Mathematics Education (3 credits)

One of the following Reading Courses (3 credits)

433-466 Reading in the Content Fields (3 credits)
433-467 Special Topics in Reading (3 credits)

Each of the following (15 credits)

414-442 Psychology of Learning Problems (3 credits)
433-436 Mathematical Development in Elementary School Children (3 credits)
433-437 Diagnosis and Remediation in Mathematics for Elementary School Teachers (3 credits)
433-438 Clinical Practicum (6 credits)

Elective Courses **6 credits**

414-340 Education of Exceptional Children (3 credits)
416-394 Cognitive Development in the School Age Child and Adolescent (3 credits)
416-495 Seminar in Special Topics (3 credits)
433-435 Special Topics in Mathematics Education (3 credits)
432-204 Educational Media (3 credits)
432-409 Special Topics Educational Media (3 credits)

CERTIFICATE IN READING INSTRUCTION

The Certificate in Reading Instruction is a 30 credit program which consists of a sequence of ten courses. This program is intended to train practising teachers in more effective developmental and corrective teaching of reading.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

Admission requirements:

1. Diploma of Collegial Studies or equivalent;
2. teacher training from an approved institution;
3. letter of recommendation from a competent authority.

Further information may be obtained from the Office of Continuing Education.

PROGRAM PROFILE

Required Courses **24 credits**

Students will normally take *eight* courses from the following. Please note special requirements where applicable.

1. Students must take at least 2 of the following 3 Reading Instruction courses. These 2 must be either 433-260 and 433-262 or 433-262 and 425-463.

433-260 Reading Instruction: Early Childhood (3 credits)
433-262 Reading Instruction: Later Childhood: (3 credits)
425-463 Reading Instruction: High School (3 credits)

And as a Pre-requisite for the Corrective Reading instruction courses

433-364 Introduction to Reading Diagnosis and Assessment (3 credits)

2. Students must take 2 of the following 3 Corrective Reading courses. These 2 courses must be either 433-261 **and** 433-263 **or** 433-263 **and** 425-467. In addition, the Reading Instruction courses at the same level as well as the introduction to Reading Diagnosis and Assessment, are pre-requisites for the Corrective Reading Courses. Both Corrective Reading courses are done normally in the

same manner, making a full six week program. Due to time conflicts, no other courses can be done while enrolled in the corrective courses.

433-261 Corrective Reading Instruction: Early Childhood (3 credits)
433-263 Corrective Reading Instruction: Later Childhood (3 credits)
425-467 Corrective Reading Instruction: High School (3 credits)

3. At least one of the following courses must be taken:

433-325 Children's Literature (3 credits)
425-366 Literature for Young Adults (3 credits)

4. The following two courses must also be included:

433-465 Integrated Language Arts (3 credits)
433-466 Reading in the Content Fields (3 credits)

Elective Courses **6 credits**

The remaining two courses in the reading sequence are to be elected by the student, with the approval of the Program Director.

CERTIFICATE IN SOCIAL STUDIES EDUCATION

This program has been designed:

1. To provide the opportunity for elementary teachers to broaden their knowledge of social studies, to be more aware of the social studies methodology and to improve their skills in individualized instruction;
2. To provide a sequence of courses which will ensure a sound foundation for any elementary teacher.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

Admission Requirements:

1. Diploma of Collegial Studies or equivalent;
2. Teacher training from an approved institution;
3. Letter of recommendation, from a competent authority.

Further information may be obtained from the Office of Continuing Education.

PROGRAM PROFILE

Required Courses **24 credits**

433-381 Social Studies C & I - Early Childhood (3 credits)
433-382 Social Studies C & I - I - Later Childhood (3 credits)
433-383 Social Studies C & I - II — Later Childhood (3 credits)
425-482 Simulation in the Social Sciences (3 credits)
425-486 Approaches to Valuing in Social Science Education
433-485 Reading Course in Elementary Social Studies (3 credits)
433-487 Independent Project (6 credits)

Elective Courses **6 credits**

416-394 Cognitive Development (3 credits)
433-325 Children's Literature (3 credits)
425-366 Literature for Young Adults (3 credits)
433-466 Reading in the Content Fields (3 credits)
432-204 Educational Media I (3 credits)

Note: In special circumstances, elective courses other than the above may be chosen with the consent of the Program Director.

PROGRAMS FOR KINDERGARTEN SPECIALISTS

This program is designed for *Québec certified* elementary school teachers who wish to become Kindergarten Specialists. This 30 credit program includes courses in Child Development, Art, Music, Creative Movement and Dramatics, Teaching Methods and Materials for children of the 4-5 age groups.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

Admission requirements:

1. Diploma of Collegial Studies or equivalent;
2. teacher training from an approved institution;
3. Québec Permanent Teacher Certification.

Further information may be obtained from the Office of Continuing Education.

PROGRAM PROFILE

Required Courses **24 credits**

416-214 Child Development (6 credits)
416-314 Developmental Testing of Young Children (3 credits)
426-322 Art Curriculum and Instruction Early Childhood (3 credits)
429-322 Music Curriculum and Instruction Early Childhood (3 credits)
433-312 Methods and Materials for the Kindergarten (3 credits)
424-324 Creative Dramatics and Children's Literature (3 credits)
424-325 Creative Movement and Dramatics (3 credits)

Elective Courses **6 credits**

Candidates may select 6 credits from the following list in consultation with the Program Director:

414-340 Education of Exceptional Children (3 credits)
414-443 School-Home Community Relations in Special Education (3 credits)
424-326 Creative Program Skills (3 credits)
429-201 Basic Musicianship (3 credits)
431-322 Teaching French as a Second Language – Early Childhood (3 credits)
433-260 Reading Instruction – Early Childhood (3 credits)
433-331 Mathematics Curriculum and Instruction – Early Childhood (3 credits)
433-371 Science Curriculum and Instruction – Early Childhood (3 credits)
433-381 Social Studies Curriculum and Instruction – Early Childhood (3 credits)
433-455 Nutrition, Health Care and the School (3 credits)
433-467 Special Topic: Language, Speech and Hearing Development – Early Childhood (3 credits)

Other elective courses may be taken only with the approval of the Program Director

4.3 Courses Offered

CURRICULUM

433-401 CURRICULUM DEVELOPMENT – EARLY CHILDHOOD. 3 credits (Corequisite: 435-421). Related to the field experience; workshops on planning integrated programs and appropriate learning environments for young children, organization of activities, use of media and materials, and methods of ensuring cooperation with the family. Emphasis of adapting programs to the needs of children.

433-402 CURRICULUM DEVELOPMENT – LATER CHILDHOOD. 3 credits. (Corequisite: 435-431). Related to the field experience; workshops on integrated programs and appropriate learning environments for elementary school children, organization of groups, use of media, materials and projects, diagnosis and evaluation. Emphasis on adapting programs to the needs of children.

KINDERGARTEN

433-312 METHODS AND MATERIALS FOR THE KINDERGARTEN. 3 credits. Analysis of the kindergarten environment with emphasis on equipment, materials, and suggestions for their use.

LANGUAGE ARTS-LITERATURE-READING

433-221 READING AND LANGUAGE ARTS CURRICULUM AND INSTRUCTION (EARLY CHILDHOOD) PART I. 3 credits. Current theories and practices related to the speaking and writing aspects of communication as they are applied in the programs of the first cycle of the elementary school and to readiness programs at the pre-school level.

433-222 READING AND LANGUAGE ARTS CURRICULUM AND INSTRUCTION (EARLY CHILDHOOD) PART II. 3 credits. (Prerequisite: 433-221). Current theories and practices related to the reading and listening aspects of communication as they are applied in the programs of the first cycle of the elementary school and readiness programs at the pre-school level.

433-223 READING AND LANGUAGE ARTS CURRICULUM AND INSTRUCTION (LATER CHILDHOOD) PART I. 3 credits. Current theories and practices related to the reading and listening aspects of communication as they are applied in the program of the elementary school.

433-224 READING AND LANGUAGE ARTS CURRICULUM AND INSTRUCTION (LATER CHILDHOOD) PART II. 3 credits. (Prerequisite 433-223). Current theories and practices related to the speaking and writing aspects of communication as they are applied in the program of the elementary school.

▲ **433-325 CHILDREN'S LITERATURE.** 3 credits. Selection and use of literature suitable for children in the elementary school. Limited enrolment.

433-326 ADVANCED READING INSTRUCTION – ELEMENTARY SCHOOL. 3 credits. (Prerequisite: 433-221 and 222, or 433-223 and 224. A critical study of materials in Reading instruction with a view to the diagnostic prescriptive methodology of teaching. Techniques for classroom diagnosis and prescription.

433-427 PROCESSES IN READING. 3 credits. Theories and research findings of the several disciplines which intersect in the process called reading, basic concepts from psychology (learning, perception, cognition, personality, attitude change) and in language (development and linguistics) – examined in relation to instructional procedures of reading programs. (Prerequisites: 200 level courses in reading methods and educational psychology.)

MATHEMATICS

▲ **433-230 BACKGROUND MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS.** 3 credits. A course specially designed for elementary school teachers to provide the basic foundations, in-

sight and understanding of the Québec modern elementary mathematics programs.

▲ **433-234 BACKGROUND GEOMETRY FOR ELEMENTARY SCHOOL TEACHERS.** 3 credits. A course specially designed for elementary school teachers to provide the basic foundations, insight and understanding of the geometry found in the Québec modern elementary mathematics programs.

433-331 MATHEMATICS CURRICULUM AND INSTRUCTION – EARLY CHILDHOOD. 3 credits. Curriculum trends in teaching mathematics to children up to the age of 8, including programs, methods, resource materials, and evaluation procedures.

433-332 MATHEMATICS CURRICULUM AND INSTRUCTION – LATER CHILDHOOD. 3 credits. Curriculum trends in teaching mathematics to children between 6 and 11, including programs, methods, resource materials and evaluation procedures.

▲ **433-433 PERSPECTIVES ON ELEMENTARY MATHEMATICS EDUCATION.** 3 credits. (Prerequisite: 433-331 or 433-332 or equivalent). A course to provide a deeper perspective of modern elementary mathematics education through a study of the active learning approach, use of structured materials, modern mathematics projects and research.

433-435 SPECIAL TOPICS IN MATHEMATICS EDUCATION. 3 credits. Seminars and workshops on specific topics in Mathematics Education. One to three topics will be chosen for study during the course, from such areas as construction of teaching materials, evaluation, audio-visual techniques, use of calculating instruments, readiness for mathematics concepts, and curriculum development.

433-436 MATHEMATICAL DEVELOPMENT IN ELEMENTARY SCHOOL CHILDREN. 3 credits. (Prerequisite: Introductory methodology course in teaching of elementary math). A study, designed primarily for "free flow" teachers, of the development of mathematical thought in elementary school aged children. The sequencing of mathematical concepts is also analysed. All processes are evaluated with reference to contemporary elementary mathematics curricula including those approved for use in Québec.

433-437 DIAGNOSIS AND REMEDIATION IN MATH FOR ELEMENTARY SCHOOL TEACHERS. 3 credits. (Prerequisite: 433-436). An introductory analysis of procedures used for diagnosis and remediation in mathematics at the elementary school level. Attention is given to formal and informal techniques and practice is given in preparing tests and analyzing results.

433-438 CLINICAL PRACTICUM IN DIAGNOSTIC AND REMEDIAL MATHEMATICS. 6 credits. (Prerequisite: 433-437). Practical diagnostic and remedial mathematical learning activities with individual students. Students will be required to develop mathematical profiles for each pupil which can be referred to by both parents and educators. They will also be required to design and carry out appropriate remedial and follow-up activities.

EDUCATION IN THE NORTH

433-242 MATHEMATICS FOR INUIT CHILDREN. 3 credits. An introduction to mathematical concepts and approaches to teaching them to Inuit students at the primary level. Emphasis on the preparation and use of materials directly related to Inuit life. Prerequisite: fluency in Inuttitut. Limited to students enrolled in Certificate in Native and Northern Education.

433-245 ORIENTATION TO INUIT EDUCATION. 3 credits. The Northern classroom as a unique pedagogical setting. Introduction to planning and maintaining a learning environment for Inuit children. Study and application of differential learning styles based on a visual - auditory - kinesthetic - tactile (VAKT) model are studied, demonstrated and practised. Prerequisite: fluency in Inuttitut. Limited to students enrolled in Certificate in Native and Northern Education.

433-246 CULTIVATING LANGUAGE AND THOUGHT. 3 credits. Study and observation of spoken language development and its maturation in Inuit children. Application of observed data to the selection and devising of appropriate materials and methods for pre-school and primary levels. Prerequisite: fluency in Inuttitut. Limited to students enrolled in Certificate in Native and Northern Education.

433-247 PRACTICUM IN INDIVIDUALIZED INSTRUCTION. 3 credits. Practicum with individual children. Planning a program which will carry over into the school year. Daily work sessions with individual child and small groups with regular evaluation of progress. Preparation of teaching materials for specific children and small groups. Prerequisite: fluency in Inuttitut. Limited to students enrolled in Certificate in Native and Northern Education.

433-248 READING AND WRITING INUTTITUT. 3 credits. Methods of teaching syllabic reading and writing – includes an understanding of the principles of sight word reading instruction, applied syllabics, child observation, material development and guided instruction. Prerequisite: fluency in Inuttitut. Limited to students enrolled in Certificate in Native and Northern Education.

433-249 INUTTITUT ORTHOGRAPHY AND GRAMMAR. 3 credits. A study of the structure and morphology of Inuttitut for teachers working in that language. Use of orthography, both qaliujaaqpait (Roman script) and qaniujaaqpait

(syllabics) as established by the Inuit Cultural Association. Prerequisite: fluency in Inuttitut. Limited to students enrolled in Certificate in Native and Northern Education.

433-441 EDUCATION IN THE NORTH – INTRODUCTION. 3 credits. Study of northern schools as unique pedagogical settings; review of physical, economic and human factors affecting curriculum needs in northern areas of the world, particularly remote and Arctic Québec.

433-444 EDUCATION IN THE NORTH – CURRICULUM. 3 credits. A practicum designed to assist the student in planning and maintaining a learning environment for children in isolated areas; emphasis on innovation in education, home and school co-operation, selection and use of materials.

NUTRITION

433-455 NUTRITION, HEALTH CARE AND THE SCHOOL. 3 credits. Consideration of the basic principles of nutrition and health with particular reference to the child; functions, requirements and sources of specific nutrients; food attitudes and behaviours; locating evaluating and using nutrition and health care information.

READING CERTIFICATE

433-260 READING INSTRUCTION – EARLY CHILDHOOD. 3 credits. Methods and materials for the teaching of reading in the first cycle of the elementary school.

433-261 CORRECTIVE READING INSTRUCTION – EARLY CHILDHOOD. 3 creditgs. Reading problems at a readiness and basic decoding level presented in a practicum format covering classroom diagnosis and remediation.

433-262 READING INSTRUCTION – LATER CHILDHOOD. 3 credits. Methods and materials for the teaching of reading in the elementary grades.

433-263 CORRECTIVE READING INSTRUCTION – LATER CHILDHOOD. 3 credits. Reading problems beyond the readiness and basic decoding level presented in a practicum format covering classroom diagnosis and remediation.

433-364 INTRODUCTION TO READING DIAGNOSIS. 3 credits. Pragmatic and theoretical development of various reading tests and remediation techniques. Use of test manuals, articles from research and pedagogical journals and professional texts. Competency in administering tests and in applying instructional techniques will be developed. (Pre-requisite: Reading Instruction core courses or permission of program director).

433-465 INTEGRATED LANGUAGE ARTS PROGRAMS. 3 credits. Methods and materials for integrating reading, listening, writing, speaking aspects of communications instruction.

† **433-466 READING IN THE CONTENT FIELDS.** 3 credits. The application of reading strategies to content material in the secondary school based upon a review of research and innovative techniques.

433-467 SPECIAL TOPICS IN READING. 3 credits. These topics are offered from time to time and focus on specific concerns in the field, exploit the expertise of visiting professors, and/or meet the needs of groups of students with common special interests. For specific course topics, check the current timetable.

SCIENCE

▲ **433-270 BACKGROUND SCIENCE FOR ELEMENTARY SCHOOL TEACHERS.** 3 credits. This course presents science as a means of exploring and explaining our environment. A study of some of the fundamental concepts and process skills common to most elementary programs. Not open to students with CEGEP Science. Limited enrolment.

433-371 SCIENCE CURRICULUM AND INSTRUCTION – EARLY CHILDHOOD. 3 credits. Programs and procedures for providing young children with useful learning experiences related to their natural environment.

433-372 SCIENCE AND CURRICULUM AND INSTRUCTION – LATER CHILDHOOD. 3 credits. Survey of modern curriculum and teaching strategies suitable for giving elementary school children an appreciation of the nature and methods of science.

433-373 TEACHING THE BIOLOGY OF REPRODUCTION AND DEVELOPMENT IN ELEMENTARY SCHOOL. 3 credits. Methods for teaching the biology of the reproductive process in organisms from simple plants, small and large animals, to man; an examination of the topics and materials dealing with sexuality and human reproduction in the elementary school curriculum. Prerequisite: open to practising teachers only.

▲ **433-473 ECOLOGICAL FEATURES OF OUR NATURAL ENVIRONMENT.** 3 credits. A lecture, laboratory and field course to train elementary school teachers in the principles and practices of field biology and nature tours. The observation and identification of various organisms and a study of their ecological relationships in the web of life. Field trips. Limited enrolment.

▲ **433-474 ECOLOGICAL PROBLEMS IN OUR ENVIRONMENT.** 3 credits. A modern study of environmental problems designed for elementary school teachers. The role of humanity in the web of life in relation to conservation, the population explosion, waste disposal, sewage treatment, air and water pollution, chemical and radiation pollution. Restricted enrolment.

433-475 PERSPECTIVES ON ELEMENTARY SCIENCE EDUCATION. 3 credits. A course to provide a deeper perspective of modern elementary science education through a study of the active learning approach, modern elementary science projects and research - an elective.

SOCIAL SCIENCES

433-381 SOCIAL STUDIES CURRICULUM AND INSTRUCTION — EARLY CHILDHOOD. 3 credits. Strategies of introducing young children into the observation and understanding of their local and community environment.

433-382 SOCIAL STUDIES CURRICULUM AND INSTRUCTION (PART I) - LATER CHILDHOOD. 3 credits. The place and purpose of community studies in the Elementary Social Studies Curriculum with practical experiences in designing strategies which use the social and economic environment as a medium of learning.

433-383 SOCIAL STUDIES CURRICULUM AND INSTRUCTION (PART II) - LATER CHILDHOOD. 3 credits. Methods for teaching and learning Social Studies with regard to understanding the spatial and temporal interactions of comparative cultures beyond the immediate experiences of the elementary school child.

433-485 READING COURSES IN ELEMENTARY SOCIAL STUDIES. 3 credits. A critical study of the literature of the new social studies as it relates to a particular problem in elementary curriculum or methodology. (Restricted to students taking the Certificate in Social Studies).

433-487 INDEPENDENT PROJECT. 6 credits. The design, preparation, implementation, and evaluation of a social studies project in a school setting. The project may involve the development of a curriculum unit, the design and preparation of learning materials, adaptations of teaching strategies, or the evaluation of existing curricula. Pre-requisite: 433-485. (Restricted to students taking the Certificate in Social Studies).

5 SECONDARY EDUCATION (425, 436)

Chairman: Prof. J.M. O'Hara

Staff: Profs. M.J. Bain, E.C. Bockus, R.G. Boulianne, J.E. Cooper, P.X. Dias, W.G. Emery, P. Francoeur, J.B. Gradwell, J.K. Harley, N.E. Hicks, Y.G. Kelebay, P.C. Landry, O.L. Logsdon, A.K. Maconochie, M.H. Maguire, D.D. McWethy, D. Modafferi, H.D. Morrison, G.D. Patton, E. Reid, W.E. Searles, D.C. Smith, J.R. Wolforth.

Cross-appointed: J. Chomay, R. Earle, M. Jeffery, S. Pupo, G. Terroux, P. Webb-Hearsey.

Department Office:
Education Building, Room 321
Tel: 392-8844

The Department of Secondary Education offers three-year Bachelor of Education programs with majors in an academic subject and in home economics (in cooperation with the School of Food Science), and general programs in the teaching of two academic subjects. It also offers one- and two-subject options in secondary education in the one-year McGill Diploma in Education program for university graduates.

The Department provides programs in vocational education, both technical and business subjects, leading to certification and to B.Ed. (Vocational Education) degree. Director of vocational education programs: Prof. J.E. Cooper.

At the Graduate level, there are a number of M.Ed. programs in teaching subjects. (For further information, consult the *Announcement of the Faculty of Graduate Studies and Research).*

5.1 Teacher Education Programs

BACHELOR OF EDUCATION

All the programs leading to the Bachelor of Education degree are designed primarily to accommodate the graduates of Québec's Colleges (CEGEPs) who aspire to a career in the teaching profession. In addition to secondary school subjects, there are programs in special areas such as art, religious education, second language, and physical education. These special areas generally lead to certification at both elementary and secondary levels.

While requiring an academic and professional concentration which is essential for the candidate's basic preparation as a teacher in a given subject area and/or level of education, these programs also provide for the selection of a broad range of optional courses. This flexibility is intended to satisfy the diverse needs and interests of each student as these are perceived by the Faculty (staff adviser) or by the students themselves.

Each program, therefore, requires the completion of at least ninety (90) course credits in academic and professional studies chosen in consultation with a staff adviser (see 1 below) according to the following pattern which differs slightly from program to program:

a) A minimum of thirty (30) course credits in an **ACADEMIC CONCENTRATION** (see 2 below);

b) A minimum of thirty (30) course credits in an **EDUCATION CONCENTRATION** (see 3, below);

c) A maximum of fifteen (15) course credits which are determined by **DEPARTMENTAL SELECTION** (see 4 below);

d) A maximum of fifteen (15) course credits which each candidate may choose as **FREE ELECTIVES** (see 5 below).

GUIDELINES FOR COURSE SELECTIONS

1) Advisers

Before registration, all first year students will be introduced to staff advisers with whom they will consult concerning program and course selection. Second and third year students will have an opportunity to make their selections in the month of April preceding registration in September. All new students (whatever year) will have the opportunity for pre-registration counselling (see Calendar dates). At registration, each student must present a copy of the Study Plan Form which was completed and signed by the staff adviser at the pre-registration meeting.

2) Academic Concentration

Academic concentration refers to those courses which provide content material related to the school subject(s) for which the teacher candidate is preparing, for example, English, History, Chemistry, etc.

For selection of available courses students are referred to the *University Timetable* and the *Announcements of the Faculties of Arts, Science, Music, and Religious Studies*. For academic courses offered by the Faculty of Education see Section 5 of this booklet.

3) Education Concentration

Education concentration refers to those courses, both required and elective, which deal with educational theory and practice. These courses are found in a Field Experience Semester (FES) and, depending on the program, either scattered through the remaining five semesters or grouped in a Basic Education Semester (BES).

The **required** education courses for each program are indicated by number and title within the profile given for each program (see below). The **elective** courses are intended to supplement the studies undertaken in the required courses, offering the opportunity for study in greater depth or breadth of general theories and practice in education. In consultation with a staff adviser, students may choose these courses from the list of Recommended Electives following.

4) Departmental Course Selection

Departmental course selection refers to those courses which are determined for each student or group of students by the Department responsible for the teaching area and/or level for which each student is preparing (example: for English, Secondary level, Department of Secondary Education). Whatever the nature of the courses selected (academic or education) they do not replace the requirements of the education concentration or the academic concentration. Thereby, the Department is able to supplement basic program requirements with other courses judged most likely to lead to a well-balanced profile relative to both the individual needs of each student and the teaching competencies demanded by the profession.

5) Free Electives

Free electives refer to those courses which may be chosen by the student in order to fulfill perceived needs or to pursue areas of scholarly interest. Thus, the student is free to enrol in any course (academic or education) offered by the University within the limits established by timetables, prerequisites, faculty jurisdictions, etc.

Before making selections, students are urged to discuss the matter with Departmental advisers or other competent counsellors. Although not required, it is recommended that the student use the opportunity provided by these free electives to plan a coherent package of course selections which complement the basic program according to individual needs.

Suggestions for Free Electives

a) to prepare for graduate study in a subject discipline, additional courses in the **ACADEMIC CONCENTRATION;**

b) to prepare for graduate study in Education, a group of courses from a selected area (for example, Educational Psychology, Sociology of Education, Foundations of Education);

c) to support the minimum requirements of a General Secondary program, a choice of additional academic and curriculum courses in the areas of concentration;

d) to supplement preparation in elementary education, appropriate courses offered in Psychology, curriculum, or related academics;

e) to provide background for those who intend to teach in Catholic schools, selected courses in Catholic studies;

f) to enhance the basic teaching techniques, courses available in Educational Media.

g) to receive initial training in the teaching of the physically and mentally handicapped, introductory courses in special education.

For a full range of course offerings which might serve this purpose, consult the *Announcements* of other faculties, especially those of Arts and Science. Courses available as **Free Electives** in the Faculty of Education may be selected from the List of Course Offerings (below) in consultation with a Faculty adviser.

RECOMMENDED EDUCATION ELECTIVES (SECONDARY AND SPECIAL AREAS):

Note: χ denotes Field Experience Component)

To supplement required courses in the Education Concentration, students should select courses from the following list of electives, in consultation with the program adviser. The general aim of these courses is to study certain aspects of educational theory and practice which are common to all teaching specialties. For serious reasons advisers may allow students to substitute another education elective (indicated in the course list by a "†").

412-304	Group Processes	3 credits
423-405	Introduction to Educational Criticism	3 credits
411-406	Introduction to Comparative Education	3 credits
χ411-407	Education and Society in Québec	3 credits
χ423-408	Human Values and Education (oriented to elementary education)	3 credits
411-409	Women and Education	3 credits
411-205	Sociology of Education – an overview	3 credits
χ416-208	The Development of Personality and Social Behaviour in the School Age Child	3 credits
416-304	Measurement and Evaluation in Education	3 credits
416-305	Non-Verbal Communication	3 credits
χ414-346	Talented and Gifted Students	3 credits
χ416-377	Adolescence and the Process of Education	3 credits
χ416-492	Psychology and Instructional Design	3 credits
χ415-398	Philosophy of Catholic Education (for those intending to teach in Catholic Schools)	3 credits
425-365	Experience in Communications	3 credits
433-466	Reading in the Content Fields (U2, U3)	3 credits
425-482	Simulation in Social Sciences	3 credits
431-311	Linguistics Applied to Teaching English as a Second Language	3 credits
432-204	Media I	3 credits

MAJOR PROGRAMS

For those who wish to prepare for a teaching career at the secondary school level, the Faculty offers MAJOR PROGRAMS in a variety of concentrations: BIOLOGY, CHEMISTRY, ECONOMICS, ENGLISH, GEOGRAPHY, HISTORY, LATIN, MATHEMATICS, MODERN LANGUAGES (GERMAN, ITALIAN or SPANISH) or PHYSICS.

Profiles and Course requirements for these 90 credit MAJOR PROGRAMS are as follows:

Academic Concentration: 30 credits in the selected subject. Courses should be chosen in consultation with a departmental adviser from the offerings available in the Faculty of Arts or Science. It is recommended that these courses be completed by the end of the second year and before the major field experience.

Sem. 1: 411-204A Introduction to Education 3 credits
Sem. 2: 416-260B Introduction to Educational Psychology 3 credits; 425-291B Observation and Familiarization 1 credit through teaching area department (both required).

Sems. 3 & 4: 3 credits selected from list of available Education electives. At least 3 credits must be taken in a course which includes a field component.
Sem. 5: 435-376D Field Experience – Secondary School (1 subject) 9 credits; an associated course in curriculum and instruction 3 credits; Educational electives 6 credits.
Sem. 6: 423-420B Issues in Education 3 credits; 425-490D Special Project 2 credits; 448-301D Orientation to Secondary School Teaching 0 credit.

Departmental Course Selections: 9 credits to be authorized by Departmental Chairman or adviser according to individual student's scholastic background, career orientation, and program need. May be taken any time but semester 5.

Recommended Education Electives (Secondary and Special Areas).

Free Electives: 15 credits chosen by the student in consultation with department adviser from any available course in the University. May be taken any time but semester 5.

MAJOR IN HOME ECONOMICS EDUCATION

Students who elect to follow a Major program in Home Economics are required to enrol in the courses offered in the School of Food Science for the first four semesters. During that period they are required to complete 60 course credits according to a prescribed profile (see Announcement, Faculty of Agriculture). Students then enrol for 30 course credits in professional subjects at the Faculty of Education.

THIRD YEAR

411-204A INTRODUCTION TO EDUCATION 3 credits
423-420B ISSUES IN EDUCATION 3 credits
416-260A INTRODUCTION TO EDUCATIONAL PSYCHOLOGY 3 credits
425-472D CURRICULUM AND INSTRUCTION IN HOME ECONOMICS 3 credits
425-474D ADVANCED STUDY IN HOME ECONOMICS C & I 3 credits
435-376D FIELD EXPERIENCE SECONDARY SCHOOL (1 SUBJECT) 9 credits
448-301D ORIENTATION TO SECONDARY SCHOOL TEACHING 0 credits

Two Education Electives 6 credits

General Programs

For degree candidates who seek preparation at the secondary level, Select two (2) subject areas:

Biology, Chemistry, Economics, English, French (Second Language), Geography, History, Latin, Mathematics, Modern Languages (German, Italian or Spanish), Physical Education, Physics, and Religious Education (Catholic or Protestant).

Profiles and Course requirements for these 90 credit General Programs (with the exception of Physical Education and a classroom subject) are as follows:

Academic Concentration: 36 credits (18 credits in each of the selected subjects). Courses should be chosen in consultation with a department adviser from the offerings available in the Faculty of Arts, Science, Religious Studies, or Education. It is recommended that these courses be completed by the end of the second year and before the major field experience.

Education Required Courses 27 credits

Sem. 1: 411-204A Introduction to Education 3 credits
Sem. 2: 416-260B Introduction to Educational Psychology 3 credits; 425-291B Observation and Familiarization 1 credit through teaching-area department.
Sems. 5 and 6: 435-377D Field Experience-Secondary School (2 subjects) 9 credits; Two associated courses in curriculum and instruction 6 credits; 423-420B Issues in Education 3 credits; 425-490B Special Project 2 credits; 448-301D Orientation to Secondary School Teaching 0 credits.

Education Elective Courses 9 credits

Semester 3 or 4: one 3 credit course with field experience component, to be selected from the list of available electives on p.

Departmental Course selections 3 credits

3 credits to be authorized by Departmental chairman or adviser according to individual student's background, orientation and need. To be taken in the third year.

Free Electives – 15 credits chosen by the student in consultation with departmental adviser from any available course in the University. May be taken in any semester except 5.

DIPLOMA IN EDUCATION

The Faculty of Education offers a variety of one-year professional programs in preparation for a teaching career in secondary education. These programs are open to candidates who hold a university degree. For admission details, see Section 3.2.

Candidates will be admitted to prepare in either one or two teaching subject areas.

Required Courses

411-204 – Introduction to Education
423-420 – Issues in Education, or
415-398 – Philosophy of Catholic Education
416-260 – Introduction to Educational Psychology
435-376 – Field Experience–Secondary School (1 Subject), or
435-377 – Field Experience–Secondary School (2 Subjects) or
435-496 – Field Experience – Elementary and Secondary School
448-301 – Orientation to Secondary School Teaching

Students in the Secondary Diploma Program are required to complete two periods of student teaching comprising four weeks in the first semester and five weeks in the second, in selected high schools. During these periods, students are expected to commit themselves exclusively to the teaching programs arranged by the Faculty in cooperation with the schools.

From the following list, the candidate preparing in a single teaching subject **CHOOSES ONE,** the candidate preparing in two teaching subjects **CHOOSES TWO:**

Biology*	425-374
Chemistry*	425-377
English	425-361
Economics	425-380

English* (Second Language)	431-358
General Sciences*	425-370
Geography	425-382
Home Economics**	425-472 and 474
History	425-385
Mathematics	425-353
Physics*	425-379
Religion (Catholic)	415-392
Religion* (Protestant)	421-372
French*	431-372
Latin*	431-378
German*	431-379
Italian*	431-379
Spanish*	431-379
Social Studies*	425-388

*Not available as a single subject.
**Available as a single subject only.

Single Subject Candidates

Candidates preparing in a single teaching subject must take an additional Advanced Curriculum and Instruction course in their teaching subject from the following list:

415-393	Catholic Studies
425-474	Home Economics
426-474	Art
425-462	English
425-452	Mathematics
425-485	Geography
425-484	History
425-381	Economics
431-373	Second Languages

Education Electives

All candidates will select two Education Electives with the approval of the adviser. Normally, courses will be selected from the following list, but other courses may be added with the approval of the Director of Teacher Education:

416-377	Adolescence and the Process of Education
416-304	Measurement and Evaluation in Education
425-390	Secondary School Curriculum
425-365	Experiences in Communication
433-466	Reading in the Content Fields

VOCATIONAL EDUCATION CONCENTRATIONS

Required Courses

Candidates will take courses in the categories listed at the beginning of Section 5.1.

Technical Education Concentration only:

436-373 – Methods in Teaching Technical/ Vocational Subjects
436-374 – Organization and Administration in Technical Subjects

Business Education Concentration only:

436-360 – Teaching Methods in Business Education
436-364 – Organization and Administration in Business Education

Elective Course(s)

Students in the Technical and Business Education concentrations will take two education electives as specified for secondary education students.

5.2 Programs of Professional Development

B.Ed. (VOCATIONAL EDUCATION)

This 90 credit degree is primarily designed for persons who are already teaching vocational education subjects at the secondary school level. (Persons who are not presently teaching should refer to Note 1 below.) The degree is completed in two phases: certification and professional development.

Certification Phase. The certification phase consists of teaching methodology courses and includes:

436-266	Basic Integrated Course 8 credits
435-235	Field Experience in Secondary Education 4 credits
436-267	Development of Vocational Education in Québec 2 credits
436-268	Instructional Technology 6 credits
436-269	Instructional Design 4 credits
436-564	Organization and Administration of Business Education
or	
436-574	Organization and Administration of Technical Vocational Education 6 credits

Total **30 Credits**

Professional Development. This phase is tailored to the individual needs of each candidate and although there are no specific courses required of all students this phase comprises the following blocks of courses.

Academic Concentration: 30 credits. Courses should be chosen in consultation with an adviser and must relate directly in a practical skills way to the subject area(s) taught in the technical laboratory or the business classroom.

Departmental Selection: 15 credits. Courses selected by the student in consultation with an adviser. For Technical students these courses should provide a broad background to all Vocational Education Sectors. For Business students courses should provide expertise in the methodology of teaching specific business subjects.

Free Electives: 15 credits. Courses freely selected by the student but with the knowledge of the adviser. Courses must count for university credit.

Note 1. PERSONS NOT PRESENTLY TEACHING who wish to pursue the B.Ed. (Vocational Education) can do so by enrolling full time in courses described under the heading Vocational Education for the first year after which they will follow the pattern described above for the professional development phase. A part-time route for persons wishing to enter the teaching profession in the future may be available at a later date. For information telephone 392-8824 or 392-8059.

Admission requirements, application forms and further information may be obtained from the Office of Continuing Education.

5.3 Courses Offered

GENERAL

425-291 OBSERVATION AND FAMILIARIZATION. 1 credit. Observation, individual tutoring, and small group work in a secondary or elementary school environment. (Student activity to approximate 10 days in school setting; arrangements by Student Teaching Office in consultation with adviser).

• **425-390 SECONDARY SCHOOL CURRICULUM.** 3 credits. This course focuses on the development of high school curricula in specific fields and their relationship to the total school program. It attempts to bring into perspective the total school program and the individual learning experience. It considers problems arising in the administration of curriculum development and curriculum implementation.

425-490 SPECIAL PROJECT. 2 credits. An independent undertaking requiring the preparation, execution, and retrospective analysis of a project focussed on practical activities in a school setting.

MATHEMATICS

425-353 SECONDARY MATHEMATICS CURRICULUM AND INSTRUCTION. 3 credits. (Prerequisites: 18 credits in Post Secondary Mathematics). This course relates to directed observations in secondary schools and includes the study of the general objectives and curriculum trends, as well as the learning problems, teaching strategies and mathematical concepts encountered in the High School curriculum.

▲ **425-451 BACKGROUND MATHEMATICS FOR SECONDARY TEACHERS.** 3 credits. A course on the nature of mathematics stressing the relationships in its basic structure and providing some of the historical, philosophical and logical bases of the mathematics of the secondary school. (Recommended to all students expecting to teach secondary mathematics).

425-452 MATHEMATICS CURRICULUM AND INSTRUCTION (ADVANCED) – SECONDARY SCHOOL. 3 credits. An advanced course in mathematics curriculum and instruction for students with mathematics as a single option. A study of individual student competency levels in mathematics with particular emphasis on criterion sampling in secondary school mathematics. Construction and use of hierarchially structured test-items designed to measure mathematical competency. Practice in preparing, administering, scoring tests and analysing test results by computer.

425-454 COMPUTING AND PROBLEM SOLVING FOR HIGH SCHOOL TEACHERS. 6 credits. The history and basic principles of digital computing for teachers, including computer systems, data storage, the use of various computer languages specially FORTRAN, methods for solving problems, computer assisted instruction, data processing, statistics and their uses for the teacher, practical experience with a time sharing system for a remote terminal.

ENGLISH

425-201 EFFECTIVE WRITTEN COMMUNICATION. 3 credits. A course designed to help students develop the quality and effectiveness of writing in various academic and professional situations. Emphasis is on the writing process itself: appropriate problem solving strategies; ways of generating, developing and organizing ideas; designing communication for different audiences and purposes; revising and editing texts; and analysing writing problems.

425-361 SECONDARY ENGLISH CURRICULUM AND INSTRUCTION. 3 credits. Examination of appropriate materials related to the high school English programs; exploration of various techniques of teaching language, literature, writing and dramatics in the secondary school.

• **425-364 LANGUAGE IN THE SECONDARY SCHOOOL.** 3 CREDITS. (Pre-requisite: An approved language or linguistics course). A study of language activity (English) among secondary school students: their growth in language competence; oral and written modes in relation to learning and to personal development *(Includes a field experience component).*

† **425-365 EXPERIENCES IN COMMUNICATIONS.** 3 credits. Personal development of students as communicators; involvement of the imagination in individual and group projects in language and in an other chosen medium of communication; analysis of experiences in projects in relation to

general problems of communication. Limited enrolment. In certain circumstances, this may be considered an academic course, with the approval of the adviser.

▲ **425-366 LITERATURE FOR YOUNG ADULTS.** 3 credits. Selection and use of literature for the differing abilities and interests of high school students.

425-462 PERSPECTIVES ON SECONDARY ENGLISH EDUCATION. 3 credits. (Prerequisite: 425-361). Seminar on special interest areas in the teaching of English in the light of contemporary theories and experiments for students who have completed a basic Curriculum and Instruction course and have had some classroom experience.

425-463 READING INSTRUCTION – HIGH SCHOOL. 3 credits. Methods and materials for the teaching of developmental reading at the high school level.

425-467 CORRECTIVE READING INSTRUCTION AT THE HIGH SCHOOL LEVEL. 3 credits. Reading problems found in remedial classes at the high school level presented in a practicum format covering diagnosis and remediation appropriate for remedial classrooms.

SCIENCE

425-370 GENERAL SCIENCE CURRICULUM AND INSTRUCTION – SECONDARY SCHOOL. 3 credits. Principles and procedures for implementation of the general science curriculum in the secondary schools of Québec. A survey of teaching methods and laboratory management appropriate to the junior and senior high school level.

425-374 BIOLOGY CURRICULUM AND INSTRUCTION – SECONDARY SCHOOL. 3 credits. A survey of curricula and teaching methods in biology at the secondary level, and the design of a modern laboratory program.

425-377 CHEMISTRY CURRICULUM AND INSTRUCTION – SECONDARY SCHOOL. 3 credits. A study of teaching strategies, philosophy and objectives of science education in chemistry at the secondary level, with special emphasis on recently developed curriculum projects. Establishment and maintenance of a chemistry laboratory.

425-379 PHYSICS CURRICULUM AND INSTRUCTION – SECONDARY SCHOOL. 3 credits. A survey of curricula and teaching methods in Physics at the secondary level, and the design of a modern laboratory program.

HOME ECONOMICS

425-472 CURRICULUM AND INSTRUCTION IN HOME ECONOMICS. 3 credits. The nature and purpose of the high school curriculum in Home Economics; lesson planning and techniques of teaching in all areas of that curriculum.

• **425-473 ORGANIZATION AND EVALUATION IN HOME ECONOMICS.** 3 credits. A study of department management, various types of instructional areas for Home Economics; necessary equipment; planning of budgets and keeping of records, examination of and practice in preparing evaluation and measurement devices.

425-474 ADVANCED STUDY IN HOME ECONOMICS C & I. 3 credits. (Prerequisite(s): 425-472 and approval of instructor). A seminar course to provide in depth study in areas of the Home Economics Curriculum and Instruction selected to suit the needs and interests of the students.

SOCIAL SCIENCES

425-380 ECONOMICS CURRICULUM AND INSTRUCTION – HIGH SCHOOL. 3 credits. An analysis of the content of Québec and other high school economics curricula together with the development of skills and abilities in the teaching of economics.

425-381 IN-DEPTH STUDY OF CURRICULUM DEVELOPMENT IN ECONOMICS. 3 credits. A study of selected topics in economics theory and in the teaching of economics at the secondary level in relation to recent developments in Social Studies. (Prerequisite or corequisite: 425-380A).

425-382 GEOGRAPHY CURRICULUM AND INSTRUCTION – HIGH SCHOOL. 3 credits. The Québec high school geography curriculum. Syllabus structure. The development and practice of methods in geography teaching.

425-385 HISTORY CURRICULUM AND INSTRUCTION – HIGH SCHOOL. 3 credits. The Québec high school history curriculum. Theories of course structure. Development and practice of teaching strategies in history.

425-388 SOCIAL STUDIES CURRICULUM AND INSTRUCTION – HIGH SCHOOL. 3 credits. Foundations of "the new social studies". Theoretical course structures. Content and process in political, sociological and economic education. Modes of inquiry in the discipline and the learner as researcher. The local community as a source of social science data and as a field of study.

425-482 SIMULATION IN THE SOCIAL SCIENCES. 3 credits. (Prerequisites: 433-381 or 382 or 425-382 or 385 or permission of Department). A critical analysis of available simulations as strategies in the social sciences. Emphasis on the elements of simulation, the processes of decision-making, and affective learnings. The development of skills in creating, with students, simulations for use in elementary and high school classes.

425-483 FIELDWORK IN SCHOOL GEOGRAPHY. 3 credits. Practical experience in developing and evaluating fieldwork assignments for use with high school geography classes in both rural and urban settings.

425-484 IN-DEPTH STUDY OF CURRICULUM DEVELOPMENT IN HISTORY. 3 credits. An exploration of the theoretical bases of history teaching. Study and analysis of recent research in high school history curriculum and instruction. (Prerequisite: 425-385).

425-485 IN-DEPTH STUDY OF CURRICULUM DEVELOPMENT IN GEOGRAPHY. 3 credits. An investigation into the theoretical bases of geography teaching and an exploration of recent research into high school geography curriculum and instruction. (Prerequisite: 425-382).

425-486 APPROACHES TO VALUING IN SOCIAL SCIENCE EDUCATION. 3 credits. Conceptual approaches to valuing and their application to teaching the social studies curriculum. Special emphasis on teaching values identification in historical and contemporary societies, value analysis of social and political change, and value clarification in public issues. Critical assessments of values education in the social sciences. (Prerequisite: a basic social studies curriculum and instruction course at the elementary or secondary level).

436 – VOCATIONAL TEACHER EDUCATION: TECHNICAL AND BUSINESS

The courses listed in this section are open only to students enroled in vocational education programs, unless otherwise authorized by the Director of Teacher Education.

436-200 CONSTRUCTION DESIGN I. 3 credits. A study of residential design through a semester project requiring planning, preliminary sketches, perspectives, working drawings, and a model of the proposed structure. Methods of implementing a residential design component in a secondary school drafting laboratory.

436-207 GRAPHIC ARTS TECHNOLOGY I. 3 credits. An overview course for general technology teachers which examines the basic industrial reproduction processes of lithography, letterpress, screen and gravure. Includes a study of representative equipment and their specifications, development of industrial materials for utlization by secondary school vocational teachers.

436-254 MATERIALS TESTING I. 3 credits. Analysis of the properties of concrete, masonry, wood and composite materials through microscopic examination and destructive and non-destructive testing. Construction of small scale equipment designed to simulate these industrial testing procedures within the secondary school laboratory.

436-256 CONSTRUCTION TECHNOLOGY I. 3 credits. A study of building material selection as related to location of structures, cost of materials, building codes, and properties of the materials. Residential construction methods, equipment, and project control. Methods of designing and building modular and experimental structures within the secondary school laboratory.

436-261 METHODS OF TEACHING SHORTHAND. 3 credits. (Prerequisite: Proof of satisfactory standing in shorthand in a college level course or equivalent). A study of instructional organization, methods and materials for teaching shorthand skills to high school pupils, development of evaluative techniques for the assessment of pupil progress.

436-266 BASIC INTEGRATED COURSE IN VOCATIONAL EDUCATION. 8 credits. An interdisciplinary approach to the theories and practices of teaching and learning in the area of Technical Vocational Education.

436-267 DEVELOPMENT OF VOCATIONAL EDUCATION IN QUÉBEC. 2 credits. A study of the trends in Vocational Education in Québec with emphasis on the period since 1945. Consideration will be given to the effects of Federal and Provincial legislation and Ministry regulations as these relate to Vocational teachers.

436-268 INSTRUCTIONAL TECHNOLOGY IN VOCATIONAL EDUCATION. 6 credits. An integrated study of introductory concepts of media strategies, communications theory, and research and development in the teaching of vocational subjects. Emphasis placed on individual project development in each participating teacher's area of specialization.

436-269 INSTRUCTIONAL DESIGN IN VOCATIONAL EDUCATION. 4 credits. An integrated application of introductory concepts in the development and evaluation of instructional design in Vocational Education. Emphasis placed on individual project development in each student's teaching speciality.

436-270 ENERGY TECHNOLOGY I. 3 credits. A survey course of energy as a tool for humanity. Power sources from primitive to the most sophisticated. Construction of scale models and other teaching aids to demonstrate generation and practical utilization of energy within a secondary school workshop.

436-275 FIELD EXPERIENCE IN BUSINESS AND INDUSTRY: OVERVIEW. 3 credits. Participation and/or observation on location in an industry or business. A study of the total operations of a selected industrial or commercial enterprise. A

comprehensive technical report is submitted upon completion of the work study.

436-276 MECHANICAL POWER TRANSMISSION SYSTEMS. 3 credits. The theory of power transmission and its application through gears, clutches, belts, and drive trains. Development of teaching aids and methodologies appropriate to teaching this part of the motorized equipment sector within the high school curriculum.

436-278 FIELD EXPERIENCE IN BUSINESS AND INDUSTRY: OVERVIEW. 6 credits. Participation and/or observation on location in an industry or business. A study of the total operations of a selected industrial or commercial enterprise. Includes an investigation of the inter-relationship of specific parts of sub-divisions to the product produced or the service rendered. A comprehensive technical report submitted upon completion of the workstudy.

436-279 VEHICLE DESIGN I. 3 credits. Design of passenger transportation vehicles through analysis of function and aerodynamics of shape. Study of vehicle body production through forming and shaping techniques.

436-295 MATERIALS TECHNOLOGY. 3 credits. An investigation of the various industrial testing procedures and their adaptation to vocational programs at the secondary school level. Includes basic metallurgy, microstructure examination, and laboratory analysis of destructive and non-destructive testing.

436-296 MATERIALS PROCESSING I. 3 credits. Study of primary and secondary manufacturing processes including extrusion, lamination, stamping, forging, and casting of metallic materials. Methods of implementing similar processes in the mechanics sector of the technical curriculum.

436-298 METAL FUSION I. 3 credits. An examination of metal fusion procedures for high school welding programs. Includes the theory and application of arc, resistance and oxyacetylene welding processes and gas cutting techniques. Survey of related equipment, specifications, and safety considerations. Development of instructional materials for use by the secondary school welding teacher.

436-305 DESIGN FOR PRODUCTION TOOLING. 3 credits. An analysis of product and mechanical design to develop an advanced drafting course for the secondary school level. Experiences in jig, fixture, and die design in the development of working drawings to solve production design problems.

436-307 CONSTRUCTION DESIGN II. 3 credits. A study of plumbing, heating, and air conditioning systems and their application to a high school drafting or hydrothermics curriculum. Includes examination of residential and commercial installations.

436-351 INTRODUCTION TO TECHNOLOGY: SURVEY. 3 credits. A course designed to acquaint students with the Introduction to Technology program as taught in Québec secondary schools. Subject matter includes a study of the original development of the program, theoretical framework of this and similar programs and the preparation of sample lessons. Emphasis placed on the interdisciplinary nature of teaching the different categories of technology.

436-352 INTRODUCTION TO TECHNOLOGY: SPECIAL THEMES. 3 credits. Development of one or more of the particular themes found in the Introduction to Technology program (examples include energy, transportation, housing and communication). Emphasis on the presentation, critique and revision of sample lessons and the development of instructional aids and materials. (Pre-requisite: 436-351).

436-353 TESTING OF CHEMICAL AND MECHANICAL BONDS. 3 credits. Analysis of mechanical fastening devices and natural and synthetic adhesives. Destructive testing of laboratory prepared samples.

436-354 TECHNOLOGY AND HUMANITY. 3 credits. A survey of technical developments from Graeco-Roman times to the present day and their influences on socio-economic conditions. The implication of technological change for future welfare of humanity.

436-355 PRODUCT DEVELOPMENT. 3 credits. A survey of the design process used in industrial product development. Conceptualization and development of patentable ideas or products by class participants. Methods of stimulating the creativity of secondary school pupils.

436-360 TEACHING METHODS IN BUSINESS EDUCATION. 3 credits. A course in general teaching principles which will include the teaching and learning process, lesson planning, unit planning, and techniques of instruction specific to: a) Accounting and Business Machines b) Typewriting and Shorthand.

436-361 METHODS OF TEACHING TRANSCRIPTION. 3 credits. Selection, organization, and presentation of materials to develop shorthand and machine transcription skills. Development of evaluative techniques used to determine instructional effectiveness in the field of transcription.

436-362 METHODS OF TEACHING TYPEWRITING. 3 credits. (Prerequisite: Proof of satisfactory standing in typewriting in a college-level course). Techniques for teaching typewriting at the secondary school level. A study of special methods and devices used in lesson planning, presentation and evaluation.

436-363 METHODS OF TEACHING OFFICE PRACTICE AND OFFICE RELATED SUBJECTS. 3 credits. (Prerequisite: Proof of satisfactory standing in a

college-level or equivalent course in Office Practice or Secretarial Practice). A study of materials and procedures in the teaching of office oriented subjects including the operation of major office machines, simulation through integrated projects and model office simulations, and the application of these to time block scheduling.

436-364 ORGANIZATION AND ADMINISTRATION OF BUSINESS EDUCATION. 3 credits. A course designed to investigate the place of Business Education in the secondary school curriculum and to indicate to the beginning teacher the need for good planning and administration in the classroom routine and to develop an ability to evaluate various aids to the learning process.

436-365 WOOD TECHNOLOGY II. 3 credits. Extensive study and experimentation in one or several of the following areas: wood conversion, modified wood materials, production equipment, surface treatments, and production management. Methods of simulating industrial procedures within the secondary school laboratory.

436-367 CONSTRUCTION TECHNOLOGY II. 3 credits. Methods of simulating large scale construction systems within secondary school facilities. Examination of design considerations, methods and materials used in the construction of commercial and industrial complexes. Identification and evaluation of teaching aids available to the construction trades teacher.

436-372 ENERGY TECHNOLOGY II. 3 credits. An investigation of the transformation and transmission of energy and its use in communication, processing, and measurement systems. Design and construction of mock-ups, prototypes, and other instructional aids to be used by secondary school vocational teachers in their power technology related courses. (Pre-requisite: successful completion of Energy Technology I or equivalent).

436-373 METHODS IN TEACHING TECHNICAL SUBJECTS. 3 credits. Methods and techniques of instruction in vocational education subjects. Classroom management and administration. Lesson planning and use of instructional materials. Individual assignments, demonstrations and reports. Special problems of the teacher.

436-374 ORGANIZATION AND ADMINISTRATION IN TECHNICAL EDUCATION. 3 credits. A course designed to investigate the principles of effective laboratory management, planning, safety, material and tool control, as they relate to student and teacher responsibilities in the secondary school.

436-375 APPROACHES TO TEACHING HOUSING AND DESIGN. 3 credits. (Prerequisite: 370-341 is recommended). An analysis of factors influencing the choice of housing and the selection of interior furnishings. Techniques to be used by teachers involved in the housing and design sector of the home economics curriculum.

436-376 EDUCATION EVALUATION IN VOCATIONAL EDUCATION. 3 credits. Emphasis on student growth and progress in public education; appraisal of specialized techniques of evaluation, teacher made tests, and data analysis as specifically related to Technical-Vocational Education.

436-377 FLUID POWER SYSTEMS. 3 credits. An examination of fluid power systems and components appropriate to secondary school hydrothermic and motorized equipment vocational courses. Identification of physical laws and principles governing the behaviour of fluids for power and signal transmission. Development of instructional aids and equipment specifically designed for high school use.

436-378 FIELD EXPERIENCE IN BUSINESS AND INDUSTRY: PROCESS. 3 credits. A work study experience selected in consultation with an adviser focusing on new equipment, techniques or practices recently introduced into industry or business. The course requirements will also include the preparation and submission of a technical report.

436-379 FIELD EXPERIENCE IN BUSINESS AND INDUSTRY: PROCESS. 6 credits. For course description, see 436-378 above.

436-380 FIELD EXPERIENCE IN BUSINESS AND INDUSTRY: PROCESS. 9 credits. For course description see 436-378 above.

436-383 CURRICULUM DEVELOPMENT IN VOCATIONAL EDUCATION. 3 credits. Curriculum organization of technical vocational education in harmony with the needs of contemporary society; readings, discussions, terminology, aims and objectives, analysis, instructional units, principles of course organization and planning of curricula for specific situations.

436-390 SAFETY EDUCATION. 3 credits. Examination of industrial safety considerations in the secondary school; includes general machine design, facility layout, and other ergonomic factors which minimize accidents. Special attention given to high risk equipment, personal safety hazards, and teacher responsibility and liability within vocational education facilities.

436-395 PRINCIPLES AND FOUNDATIONS OF CANADIAN VOCATIONAL EDUCATION. 3 credits. A study of leaders, movements, legislation, events, and institutions that have contributed to the formation and development of vocational education. Special attention given to economic, social and philosophical factors.

436-396 PRE-VOCATIONAL BUSINESS EDUCATION. 3 credits. Development of methods and

materials; organization of subject matter appropriate for teaching exploratory courses in Business Education at the high school level.

436-397 PRE-VOCATIONAL TECHNICAL EDUCATION. 3 credits. Development of methods and materials; organization of subject matter appropriate for teaching exploratory courses in Technical Education at the high school level.

436-398 SPECIAL PROJECT IN VOCATIONAL EDUCATION. 3 credits. A project related to the student's teaching concentration will be investigated, developed, produced, implemented, and/or evaluated, depending on the nature of the project. Students must identify the problem or topic to be investigated and obtain approval of the instructor. Includes preparation and submission of a written report.

436-399 METAL FUSION II. 3 credits. Principles and theory of specialized welding procedures using conventional welding equipment. Includes introduction to tungsten and metallic inert gas welding processes and metal surfacing processes. Design and construction of instructional materials suitable for advanced welding programs at the secondary school level.

436-404 LANGUAGE OF INDUSTRY III. 3 credits. Experiments in descriptive geometry including graphical solutions of co-planer and non-coplaner force systems, bearing and slope notation of lines, geology, mining, topography and land surveying. Techniques of teaching and theory, and practice of these areas as related to secondary school drafting programs.

436-405 CURRENT TRENDS IN GRAPHIC ARTS TECHNOLOGY. 3 credits. Survey of new materials and methods in graphic arts technology, the evolution of the field from a craft to a science, and the implications for the roles of engineers and scientists working in the industry.

436-456 INDUSTRIAL MANAGEMENT AND PRODUCTION CONTROL. 3 credits. Analysis of production methods, time and motion studies, plant layout and design, quality control, and management techniques in selected industrial enterprises. Simulation in the school setting of industrial production methods.

436-461 METHODS OF TEACHING ACCOUNTING. 3 credits. (Prerequisites: 271-501, 502, 311 and 312 or equivalent). Organization of knowledge and learning activities to achieve instructional objectives. Development of evaluative techniques used in determining instructional effectiveness in the field of accounting.

436-462 METHODS OF TEACHING DISTRIBUTIVE EDUCATION SUBJECTS. 3 credits. Organization of learning activities, the development of instructional materials, teaching strategies and evaluative techniques for the teacher of distributive education subjects.

436-463 METHODS OF TEACHING DATA PROCESSING. 3 credits. Techniques for teaching data processing at the secondary level. A study of special methods and devices used to interpret the fundamentals of data processing as currently used in the business world.

436-464 TESTING OF NATURAL AND SYNTHETIC COATINGS. 3 credits. Analysis and testing of natural and synthetic surface coatings. Examination of durability adhesion, and moisture resistant properties of transparent and opaque finishes. Methods of applications.

436-470 MOTORIZED SYSTEMS – DIESEL. 3 credits. Principles and application of diesel engines. Thermal, volumetric and mechanical efficiency related to operation and maintenance. Factors involved in setting up the heavy equipment sector in secondary schools.

436-476 SPECIAL SEMINARS IN RECENT TECHNOLOGICAL DEVELOPMENTS. 3 credits. Observation and examination of contemporary developments in selected technologies related to various vocational sectors. Areas under study will vary from year to year.

436-477 FIELD EXPERIENCE IN BUSINESS AND INDUSTRY: METHODOLOGY. 3 credits. A workstudy experience involving observation and evaluation of training techniques and pedagogical principles used by business or industry in the preparation of personnel for specified tasks. Includes preparation and submission of a technical report.

436-478 FIELD EXPERIENCE IN BUSINESS AND INDUSTRY: METHODOLOGY. 6 credits. A workstudy experience involving observation and evaluation of training techniques and pedagogical principles used by business or industry in the preparation of personnel for specified tasks. Includes preparation and submission of a technical report.

436-479 VEHICLE DESIGN II. 3 credits. Group design, construction and testing of a prototype vehicle created to solve a particular need determined by the class. Integration of power, mechanical, and electrical systems into a functioning vehicle.

436-482 SELECTED STUDIES IN BUSINESS AND INDUSTRY. 3 credits. A specially designed course related to the teaching specialities of the individual student. Involves a study of contemporary technological developments from business or industry. In addition to meeting the requirements of the training program, students must submit a comprehensive report. Prerequisite: normally taken at the U3 level.

436-495 MATERIALS PROCESSING III. 3 credits. Advanced machining processes characteristic of the tool and die industry. Abrasive and chipless machining. Precision measurement, gauging,

and metrology. Methods of teaching applied mathematics and science in secondary school machine shop processes.

436-496 MATERIALS PROCESSING CONTROL. 3 credits. Principles of programmed machining. Includes tape, numerical, direct computer, and cybernetic approaches to industrial production. Techniques of adapting high school equipment to demonstrate numerical control principles.

6 EDUCATION IN THE ARTS (424, 426, 429, 451)

Chairman: Professor G. Mager

Staff: Profs. A.M. Benjamin, A.E. Jacques, C.J. Papke, E.A. Russel, R.L. Studham, L.M. Thibeault, G. Tondino, J. Watling, E.P. Webb-Hearsey, B.E. White

Cross-Appointed: F.J. Hodge, J.A. Wall

Department Office:
Education Building, Room 548
Tel: 392-8855

The Department of Education in the Arts offers a three-year Bachelor of Education program with a Major in the Teaching of Art, leading to certification for both elementary and secondary school teaching. The Department also offers specialization in the teaching of Art (Secondary) and the teaching of Music at the elementary and secondary levels within the one-year diploma program for suitably qualified university graduates.

In addition, the Department offers a graduate program leading to a M.Ed. in the Teaching of Art. (For further details, consult the *Faculty of Graduate Studies and Research Announcement).*

6.1 Teacher Education Program BACHELOR OF EDUCATION,

MAJOR IN TEACHING OF ART

Education-Required Courses

SEMESTERS 1 and 2

411-204A	Introduction to Education	3 credits
416-260B	Introduction to Educational Psychology	3 credits

SEMESTERS 3 and 4

426-342A	Art Curriculum and Instruction for Elementary School Majors	3 credits
435-444B	Field Experience – Secondary School	3 credits

SEMESTERS 5 and 6

435-376A	Field Experience – Secondary School	9 credits
426-473A	Art Curriculum and Instruction for Secondary School	3 credits
423-420B	Issues in Education	3 credits
448-301D	Orientation to Secondary School Teaching	0 credits

Education-Elective Courses

1 course	Sem. 3	3 credits
1 course	Sem. 4	3 credits
1 course	Sem. 6	3 credits

Academic Concentration

SEMESTERS 1 and 2

Students must take:

426-204	Drawing	
426-296	Basic Design	
426-208	Ceramics I	
426-206	Print Making I	12 credits

and 2 of the following:

426-205	Painting II	
426-209	Ceramics II	
426-297	Design II	
426-207	Print Making II	
426-398	Canadian Art History	6 credits

SEMESTER 3 and 4

Students must select 4 courses from 2 areas of concentration. 12 credits

Departmental Course Selections

3 courses	Sems. 5 and 6	9 credits

Free Electives

2 courses	Sem. 1 and 2	6 credits
2 courses	Sem. 4	6 credits
1 course	Sem. 6	3 credits

Note: Students are required to present an exhibition of their work at the end of the third year.

DIPLOMA IN EDUCATION

Candidates with acceptable training in Art may be admitted to a one-year program leading to a Diploma in Education and certification in the teaching of art at the secondary level.

Candidates with acceptable training in music may be admitted to a one-year program leading to a Diploma in Education and certification in the teaching of music at both elementary and secondary levels.

Required Courses

411-204 - Introduction to Education
423-420 - Issues in Education, or
415-398 - Philosophy of Catholic Education
416-260 - Introduction to Educational Psychology
435-376 - Field Experience - Secondary School (1 Subjects) or
435-377 - Field Experience - Secondary School (2 Subjects) or
435-496 - Field Experience - Elementary and Secondary School
448-301 - Orientation to Secondary School Teaching

Students in the Diploma Program are required to complete two periods of student teaching comprising four weeks in the first semester and five weeks in the second, in selected schools. During these periods, students are expected to commit themselves exclusively to the teaching programs arranged by the Faculty in cooperation with the schools.

Teaching Subjects

EITHER A or B

A 426-473 - Art Curriculum and Instruction - Secondary School, and
426-474 - Art Curriculum and Instruction - Advanced - Secondary School
B 429-442 - Elementary Music Curriculum and Instruction and
429-472 - Secondary Music Curriculum and Instruction

Education Electives

All candidates will select 2 Education Electives with the approval of the adviser. Normally, courses will be selected from the following list, but other courses may be added with the approval of the Director of Teacher Education.

416-377 Adolescence and the Process of Education
416-304 Measurement and Evaluation in Education
425-390 Secondary School Curriculum
425-365 Experiences in Communication

6.2 Courses Offered

424 - EDUCATION IN DRAMA

424-324 CREATIVE DRAMATICS AND CHILDREN'S LITERATURE. 3 credits. (Prerequisite: 424-325). Experiences in characterization, story making, story dramatization; an exploration of the elements of drama and dramatic literature at the kindergarten level. A required course for kindergarten specialists.

424-325 CREATIVE MOVEMENT AND DRAMATICS. 3 credits. Experiences in creative drama and the dynamics of movement, improvisation, creative problem solving, control and release of emotional energy. A required course for kindergarten specialists.

424-326 - CREATIVE PROGRAM SKILLS (ART, MUSIC, DANCE, DRAMA). 3 credits. An exploration of procedures to encourage imagination, invention, and expression through movement, language, literature, art, science, music, drama.

▲ **424-342 CURRICULUM AND INSTRUCTION IN THE TEACHING OF DRAMA.** 3 credits. Pedagogical theory and practical applications in the teaching of developmental drama, dramatic forms, improvisation and theatre arts. Prerequisite or corequisite: at least one course in Drama Education.

▲ **424-394 CREATIVE DRAMATICS FOR THE CLASSROOM.** 3 credits. A participatory course in creative drama and the use of improvisational techniques in the pursuit of student development.

424-395 MUSICAL THEATRE IN THE SCHOOL. 3 credits. Introduction to the concepts of musical theatre using dramatic content inherent in everyday situations. Emphasis will be placed on helping elementary and secondary teachers develop, construct and present a musical.

424-396 SPEECH IN DRAMA EDUCATION. 3 credits. Training activities to develop the potential of the voice in speech and drama; a study of the elements of voice production in teaching public speaking and drama.

424-494 IMPROVISATION AND THEATRE ARTS FOR THE CLASSROOM. 3 credits. (Prerequisite: 424-394). A course beyond the introductory level to provide further perspectives on the teaching of drama and the teaching of improvisation. Instruction and practice in play production will be included.

424-496 LEADING TECHNIQUES IN THE TEACHING OF DRAMATIC FORMS, AND IN PLAY PRODUCTION. 3 credits. Prerequisites: One or more of the following, or the permission of the instructor: 424-394, 494, 110-269. An exploration of dramatic forms, the development of drama techniques in the teaching of acting skills, and methods of play production and direction for use with young people.

426 - EDUCATION IN ART

All courses have restricted enrolment and require sectioning slips.

A studio fee of $10 per semester is charged for the following courses; print making, ceramics, sculpture, drawing and painting.

▲ **426-204 DRAWING.** 3 credits. Development of sound drafting skills through the study of organic forms and the human figure in various media.

▲ **426-205 PAINTING II.** 3 credits. (Prerequisite: 204). Investigation of color, media, tools, techniques. Studies of natural forms, the human figure.

▲ **426-206 PRINT MAKING I.** 3 credits. An introduction to some graphic media, monoprints, collagraphy, linocuts, woodcuts, etc. A practical study of the various elementary processes. Exhibition of student work required at end of term.

▲ **426-207 PRINT MAKING II.** 3 credits. (Prerequisite: 426-206 and Drawing 426-204 or permission of the instructor). Study in further graphic media techniques. These may include line engraving, dry point, relief etching, intaglio and related processes.

▲ **426-208 CERAMICS I.** 3 credits. A consciousness of the medium is developed through basic ceramic processes: hand building experiences and introduction to wheel thrown construction.

▲ **426-209 CERAMICS II.** 3 credits. (Prerequisite: 208). A continuation and concentration of wheel projects. Elementary clay and glaze preparations.

▲ **426-241 BASIC ART MEDIA.** 3 credits. A course to acquaint the student with basic art media in two and three dimensions and to provide for involvement and in-depth experience in the creative process. Recommended for students taking only one background art course.

▲ **426-242 CULTURAL SKILLS.** 3 credits. Development of skills and knowledge in art, music, handicrafts or other areas both modern and traditional. Topics will vary and be chosen from a range identified by classroom teachers. Course may continue over several training sessions.

▲ **426-296 BASIC DESIGN.** 3 credits. Exploration of the basic elements of visual art through two dimensional composition and three-dimensional constructions. Investigation of materials and tools and the processes of manipulating and relating materials.

▲ **426-297 DESIGN II.** 3 credits. Further rendering of two - and three-dimensional compositions (296) investigating the potential of basic geometric and organic forms, spatial relationships and environment. (Continuation of prerequisite 296).

▲ **426-298 APPLIED DESIGN.** 3 credits. A study of historical stages of furniture and interior design through lectures, museum studies, field trips, assignments both written and practical. (Given on Macdonald campus).

▲ **426-300 CERAMICS III: GLAZES.** 3 credits. (Prerequisite: 209). Chemistry of glazes, formation of slips, engobes and glaze. Firing and maintenance of kiln and equipment.

▲ **426-304 PAINTING III.** 3 credits. Continuation of course 205 with emphasis on drawing and structure.

▲ **426-305 PAINTING IV.** 3 credits. Continuation of course 304 with emphasis on advanced composition.

* **426-306 CERAMIC FIELD STUDY.** 3 credits. (Prerequisite: 426-209, or permission of the instructor). A three-week survey of the ceramics studios and techniques of internationally known artisans in another country. Supervised by a McGill professor, students will attend workshops, visit studios, observe demonstrations and prepare an illustrated research paper which will serve as the basis of their evaluation. Summer Session only.

▲ **426-308 RAKU CERAMICS.** 3 credits. (Pre-requisite: 426-208 or permission of instructor). Exploration of Raku techniques involving wheel work, hand building, and kiln building. Summer Session only.

▲ **426-309 CERAMICS IV.** 3 credits. (Prerequisite: 426-300). Chemistry of glazes. Emphasis placed on lab work. Firing and maintenance of kiln and equipment.

426-322 ART CURRICULUM AND INSTRUCTION - EARLY CHILDHOOD. 3 credits. Philosophy and psychology of artistic expression in young children and the role of the teacher in cultivating visual awareness and creativity.

426-332 ART CURRICULUM AND INSTRUCTION - LATER CHILDHOOD. 3 credits. Programs, materials, and methods of guiding the artistic development of children.

426-342 ART CURRICULUM AND INSTRUCTION FOR ELEMENTARY SCHOOL ART MAJORS. 3 credits. Psychology and philosophy of child art; reading and written assignments, techniques of teaching and program planning.

▲ **426-394 PRINT MAKING III.** 3 credits. (Prerequisite: 426-207). Continuation of studies of graphic techniques. These may include variations of previously learned techniques, silk screen, viscosity printing, multiple plate work, etc.

▲ **426-395 PRINT MAKING IV.** 3 credits. (Prerequisite: 426-394). Advanced studies in various graphic media. The student will be expected to be familiar with standard processes studied in the preceding courses. At this stage the student should begin to concentrate on developing a personal style, incorporating the necessary techniques to make a personal statement.

▲ **426-396 DESIGN III.** 3 credits. Application of learning and skills to more sophisticated problems of design. Consideration of design in relation to practical aspects of visual communication. (Prerequisite: 426-297).

▲ **426-397 DESIGN IV.** 3 credits. (Prerequisite: 426-396). Advanced work in the development of

perception and aesthetic presentation. Through projects and assignments students will be encouraged to pursue problems of design pertinent to their own interests).

•▲ **426-398 EARLY CANADIAN ART.** 3 credits. The visual environment, European sources and influences as revealed through a comprehensive survey of architecture, painting and applied arts from 1600 to 1867, through lectures, field trips, visual and written assignments.

•▲ **426-399 CANADIAN ART II.** 3 credits. (Prerequisite: 426-398). The growth of Canadian art as evidenced through the changing visual environment from 1867 to the present, through lectures, field trips, visual and written assignments. May not be used as a prerequisite for Methods.

▲ **426-404 PAINTING V.** 3 credits. (Prerequisite: 305). Major problems in graphic expression. A tutorial course where the student selects the instructor. Individual conferences and criticism leads the student to an independent approach to painting.

▲ **426-405 PAINTING VI.** 3 credits. (Prerequisite: 404). The student will be required to work in a variety of sizes up to mural painting. Exploration of selected media and new dimensions of design.

▲ **426-408 CERAMICS V.** 3 credits. (Prerequisite: 426-309). Advanced work in ceramics, exploration of individual problems in given medium on glaze enamelling and lustreware.

▲ **426-409 CERAMICS VI.** 3 credits. (Prerequisite: 426-408). Continuation of exploration of individual problems working all known media.

426-473 ART CURRICULUM AND INSTRUCTION – SECONDARY SCHOOL. 3 credits. (Prerequisite: for B.Ed. students 426-342 and teaching in elementary schools). A preparatory course for teaching Art in the secondary school. A study of the problems and needs of the pupil and the development of art programs suitable for the adolescent. Course is integrated with field experience.

426-474 ART CURRICULUM AND INSTRUCTION – ADVANCED – SECONDARY SCHOOL. 3 credits. (Prerequisite: Must be registered in 473). An examination of the relationship of the visual arts to the secondary school curriculum and the development of the adolescent personality. Term project. Open to one year diploma students only.

▲ **426-494 PRINT MAKING V.** 3 credits. (Prerequisite: 426-394). An extension of skills learned in Graphics I-IV. Techniques explored may include engraving, silk screen, relief etching, intaglio, collagraphy, dry point, combinations of printing techniques. Students will be expected to explore those areas which most closely correspond to their particular graphics style.

▲ **426-495 PRINT MAKING VI.** 3 credits. A further extension of skills learned in Graphics V. The student is expected to have mastered basic graphic skills and be able to work independently. A compentent development of personal style, experimentation with, and control over the chosen medium is expected.

▲ **426-496 SCULPTURE I.** 3 credits. (Prerequisite: 426-296). Designed for students individually to encourage and develop personal aptitudes; major problems of three-dimensional design in new and/or traditional materials.

▲ **426-497 SCULPTURE II.** 3 credits. Continuation of Sculpture I.

▲ **426-498 SCULPTURE III.** 3 credits. (Prerequisite: 426-497). More advanced techniques in modelling and casting, greater emphasis on considerations of the total concept and aesthetic qualities of the work. Introduction of wood sculpture and other materials.

▲ **426-499 SCULPTURE IV.** 3 credits. Advanced techniques in sculpture, wood sculpture, polyester resins and experimental work with new materials.

Note: For other courses in Art History see, Faculty of Arts Announcement.

429 – EDUCATION IN MUSIC

▲ **429-200 CLASS PIANO FOR CLASSROOM TEACHERS.** 1 credit. Keyboard experiences through group piano lessons utilizing the multiple key approach: transposition by ear; improvising simple chordal accompaniments for classroom singing, and sight reading. Lab course. Restricted enrolment.

▲ **429-201 BASIC MUSICIANSHIP FOR CLASSROOM TEACHERS.** 3 credits. Introduction to the elements of music theory through techniques of aural training, sight singing and keyboard. Lab work at the keyboard. Restricted enrolment.

▲ **429-202 SIGHT SINGING FOR ELEMENTARY CLASSROOM TEACHINGS.** 1 credit. Unaccompanied sight singing with particular reference to vocal literature applicable to the elementary school music program. Enrolment limited to 15.

•▲ **429-204 UKULELE FOR CLASSROOM TEACHERS.** 1 credit. Basic skills of ukulele playing (pic-ing and strumming); ear training; development of basic music theory. Lab course.

▲ **429-205 RECORDER FOR CLASSROOM TEACHERS.** 1 credit. Basic skills on the recorder; tone production and musical expression; development of functional understanding of fundamental elements of music; preparation of simple descants to accompany classroom singing and other materials and techniques for the classroom teacher. Lab. course.

▲ **429-214 UKULELE FOR CLASSROOM TEACHERS.** 3 credits. An introduction to the skills of ukulele playing; ear training; elements of theory through the medium of the ukulele. Harmonization and transposition of lyric melodies and modulation through indirect relations. Sight reading of appropriate materials. (Not open to students who have taken 429-204).

▲ **429-301 BASIC MUSICIANSHIP FOR CLASSROOM TEACHERS II.** 3 credits. Advanced course in the study of the elements of music theory through techniques of aural training, sight singing, keyboard or ukulele. Prerequisites: 429-201 or 429-214 and permission of instructor. Restricted enrolment.

429-322 MUSIC CURRICULUM AND INSTRUCTION – EARLY CHILDHOOD. 3 credits. Materials, methods, planning and organization of musicial experiences for developing the musical abilities of children to the age of eight through listening, creating, singing, playing instruments, and moving to music.

429-332 MUSIC CURRICULUM AND INSTRUCTION – LATER CHILDHOOD. 3 credits. Materials, methods, planning and organization of musical experiences for elementary school classes through class participation in singing, playing, moving, creating, reading music, and listening activities.

▲ **429-341 CREATIVE APPROACHES TO MUSIC LISTENING FOR ELEMENTARY TEACHERS.** 3 credits. A course which concentrates on the form, structure and history of music; stresses a creative approach to music listening in the elementary grades. Recordings appropriate for children are studied. (Prerequisite(s): 429-201 or permission of the department).

429-442 MUSIC CURRICULUM AND INSTRUCTION – ELEMENTARY. 3 credits. Materials and methods of teaching elementary music. Includes directed observation and videotaped class participation and teaching in an elementary school.

429-472 MUSIC CURRICULUM AND INSTRUCTION – SECONDARY. 3 credits. Materials and methods of teaching music in the high school. Includes directed observation and micro-teaching in a high school situation.

451 – EDUCATION IN DANCE

451-201 CREATIVE DANCE IN THE SCHOOLS I. 3 credits. An introduction to creative dance with emphasis on Laban's theory of movement and dance techniques, and their implications for education. The course involves dance studies as well as required reading and written assignments.

451-202 RHYTHMIC ACTIVITIES. 3 credits. Study of the relationship between dance and music of elementary dance formations and step patterns, and of age-appropriate equipment to accompany rhythmic activities.

451-203 MODERN DANCE FORMS. 3 credits. The study and demonstration of contemporary jazz and modern dance forms and of their derivation and development as art forms over the years.

451-301 CREATIVE DANCE IN THE SCHOOLS II. 3 credits. Continuation of the study of Laban's theory of dance with an exploration of a wide range of stimuli, including music, sculpture, poetry, and science; application to helping children develop their powers of expression through movement. Pre-requisite: Creative Dance in the Schools I (451-201).

▲ **451-392 DANCE EDUCATION CURRICULUM AND INSTRUCTION.** 3 credits. The development of dance programs and teaching methodologies appropriate for different age groups at the elementary and secondary school levels. This course includes a field component. Prerequisite: 427-301.

7 PHYSICAL EDUCATION (434)

Chairman: Professor D.R. Riley

Staff: J. Chomay, J. Dallaire, J.F. Hodge, T.B. Hoshizaki, D.Q. Marisi, D.L. Montgomery, G.I. Nei, D.A. Nichol, G.D. Reid, M. Walker, J. Wall, R.E. Wilkinson.

Department Office
Currie Gymnasium
Tel: 392-4733

The Departmentof Physical Education offers a three-year program after CEGEP leading to a Bachelor of Education degree (Major in Physical Education) and certification to teach at both elementary and secondary school levels.

The Department also offers programs at the graduate level leading to an M.A. (For further information, see *Announcement of the Faculty of Graduate Studies and Research).*

7.1 Teacher Education Program BACHELOR OF EDUCATION,

MAJOR IN PHYSICAL EDUCATION

Education-Required Courses

SEMESTERS 1 and 2

411-204A	Introduction to Education	3 credits
434-342B	Physical Education Methods	3 credits
416-260B	Introduction to Educational Psychology	3 credits
435-295B	Directed Observation Elementary and Secondary Schools	3 credits

SEMESTERS 5 and 6

435-346A	Field Experience-Elementary School	9 credits
	or	
435-376A	Field Experience-Secondary School	9 credits
	or	
435-496A	Field Experience-Elementary and Secondary School	9 credits
	and	
434-494A	Principles and Curriculum Development in Physical Education	3 credits
423-420B	Issues in Education	3 credits
448-301D	Orientation to Secondary School Teaching	0 credits

Education-Elective Courses

Two in Semester 3	6 credits
One in Semester 6	3 credits

Departmental Selection Courses

SEMESTERS 1 and 2

434-203A		3 credits
434-206B		3 credits

SEMESTER 4

435-444B	Field Experience-Elementary School	3 credits
	or	
434-371B	Field Experience-Physical Education	3 credits
	or	
435-374B	Field Experience-Secondary School	3 credits

Academic Concentration

SEMESTER 1

434-205A	Biomechemics-Structural Analysis	3 credits

SEMESTER 3

434-331A	Introductory Homeostatic Physiology	3 credits

SEMESTER 4

434-391B	Ergo-Physiology	3 credits
434-492B	Psychology of Motor Performance	3 credits

Physical Education Skills and Techniques (see page 17).

3 credits in each of 6 semesters	18 credits

Free Electives

Sem. 1	3 credits
Sem. 3	3 credits
Sem. 4	3 credits
Sem. 6	6 credits

Note 1: Costume and Equipment: All students pursuing a major program in Physical Education are required to wear a costume appropriate to the activity as approved by the instructor. Students are also responsible for providing some items of personal sports equipment such as skis, skates, tennis racquets, etc.

Note 2: All students in the Physical Education major program must complete a minimum of 18 semester credits in physical educational Skill and Techniques courses before graduation. Of these, 11 credits are required. The remaining credits are to be chosen from the optional list. Registration in an advanced activity course requires at least a "C" grade in the introductory course and permission of the instructor. Not all elective activity courses will be offered each year. It should be possible, however, for a candidate to elect any of these options sometime during the three year program.

7.2 Courses Offered

▲ **434-203 INTRODUCTION TO PHYSICAL EDUCATION.** 3 credits. An introduction to the role of the physical educator within education and the community: physical growth and motor development principles with particular reference to their importance in teaching physical education: an analysis of the teaching sytles that the physical educator or may use in different programs.

▲ **434-204 HEALTH EDUCATION.** 3 credits. A study of the teacher's role in the total school health program at both elementary and high school levels; current issues in contemporary health education.

▲ **434-205 BIOMECHANICS – STRUCTURAL ANALYSIS.** 3 credits. Skeletal, muscular and nervous system are examined anatomically and physiologically within the realm of how they interact to generate and apply the forces which permit man's mobility.

▲ **434-206 BIOMECHANICS – KINEMATICAL ANALYSIS.** 3 credits. (Prerequisite: 434-205). Analysis of fundamental human movement and the kinematic concepts which underlie each: Stability, agility, walking, running, jumping, throwing, absorbing forces, striking, kicking, spinning, twisting, aquatics and work positions.

† **434-207 TESTS AND MEASUREMENT IN PHYSICAL EDUCATION.** 3 credits. The function of this course is to acquaint students with the selection, construction and use of tests designed to measure sports skills, motor abilities, physical fitness and related knowledge. It includes an introduction to elementary statistics as related to their use in the physical education teaching situation.

▲ **434-224 FOUNDATIONS OF MOVEMENT EDUCATION.** 3 credits. Personal and creative activity in manipulative, non-manipulative and expressive motor activity; the study of basic movement education concepts, principle of movement and the role of movement education in the life of the developing child. (Not open to P.E. Majors)

▲ **434-290 INTRODUCTION TO COMMUNITY RECREATION.** 3 credits. The need for, scope of, and problems associated with community recreation will be studied. The relationship between the organizational structure and programs offered by a recreation agency will be examined. Students will study the different types of recreation agencies within a community and consider means to coordinate their services.

434-291 OBSERVATION AND FAMILIARIZATION. 1 credit. Observation individual tutoring, and small group work in a secondary environment. (Student activity to approximate 10 days in school setting; arrangements by Student Teaching Office in consultation with adviser). (Not open to P.E. Majors).

434-292 RECREATION LEADERSHIP. 3 credits. Students will be guided to select, use, and evaluate different leadership techniques in a variety of recreation situations. Students will consider theoretical readings on leadership and examine the relationship between program content and leadership style in practical sessions.

434-322 MOVEMENT EDUCATION – CURRICULUM AND INSTRUCTION – EARLY CHILDHOOD. 3 credits. (Not open to Physical Education majors). Methods, planning, organization and evaluation of experiences designed to develop the young child's functional and expressive movement skills.

▲ **434-324 MOVEMENT EDUCATION FOR THE EARLY CHILDHOOD TEACHERS.** 3 credits. (Prerequisite: 434-224 Foundation of Movement Education). A repertoire of skills will be developed in the areas of aquatics, dance, games, gymnastics and recreational activities, based on knowledge of child growth and development and on Laban's descriptive analysis of movement.

▲ **434-331 INTRODUCTORY HOMEOSTATIC PHYSIOLOGY.** 3 credits. (Prerequisite: 434-205). Introduction to the basic principles of physiological mechanisms which maintain homeostasis of the mammalian organism during non-stress conditions: cell function, neural systems and conduction; kidney, blood, cardiovascular system; respiration and metabolism.

434-332 PHYSICAL EDUCATION – CURRICULUM AND INSTRUCTION – LATER CHILDHOOD. 3 credits. (Not open to Physical Education majors). Principles, programs and procedures that an elementary teacher may use to promote organic development and competence in physical skills.

434-340 INTRODUCTION TO OUTDOOR EDUCATION. 3 credits. (Prerequisite: 413-204 and Directed Observation course). A multidisciplinary approach to the outdoors as a natural teaching environment; study of various program models and their practical application in selected settings; guiding principles for planning and organization; survey of current trends; development of resource materials; field experience. LAB FEES.

434-342 PHYSICAL EDUCATION METHODS. 3 credits. (Prerequisite for 435-295). This course is designed to enable the physical education teacher to provide a developmentally sound program of varied activities suitable to the needs of children K-11. Students will have opportunities to observe and interact with elementary children as well as planning, teaching and evaluating micro-lessons.

434-371 FIELD EXPERIENCE-PHYSICAL EDUCATION. A work-study experience focusing on a specific aspect of Physical Education and carried out in a community agency selected

with the approval of the Department. Prerequisite: 435-295B.

▲ **434-391 ERGO-PHYSIOLOGY.** 3 credits. (Prerequisite: 434-331). Emphasis is on human organic adaptability; acute and chronic adaptive mechanisms to exercise and other environmental stresses are analysed. A laboratory program is included to evaluate (measure and predict) adaptive capacity and assess factors affecting it.

434-480 FIELD EXPERIENCE – RECREATION EDUCATION. 3 credits. (Prerequisite: permission of the instructor). 3 week full-time experience in a selected recreation agency for those students seeking full-time employment in the field of recreation. Selection of the agency will be undertaken jointly by student and adviser.

434-490 SPECIAL PROJECT. 2 credits. An independent undertaking requiring the preparation, execution, and retrospective analysis of a project focussed on practical activities in a school setting. (B.Ed. Secondary two subject options, or permission of instructor).

▲ **434-492 PSYCHOLOGY OF MOTOR PERFORMANCE.** 3 credits. This course is concerned with selected psychological factors in terms of their relationship to the acquisition of motor skills, that is, how they affect the skill acquisition of the individual and how the activity patterns of the individual affect the psychological factors.

† **434-493 ADMINISTRATIONOF PHYSICAL EDUCATION.** 3 credits. Organization and administration of programs in Physical Education; emphasis on common problems encountered by physical educators in the instructional, intramural and interscholastic areas.

434-494 PRINCIPLES & CURRICULUM DEVELOPMENT IN PHYSICAL EDUCATION. 3 credits. (Prerequisite: 435-444 or 435-374 or 435-371). Directed towards an understanding of the important principles which should be the foundation of a modern program in Physical Education; student's role in the development, implementation and evaluation of the Physical Education Curriculum.

▲ **434-495 SCIENTIFIC PRINCIPLES OF ATHLETIC TRAINING.** 3 credits. (Prerequisites: 434-331 and 434-391). Application of physiological and kinesiologicla principles in the selection, and evaluation of athletic and physical fitness programs. Specific topics studied will include aerobic and anaerobic training, interval training, circuit training, weight training for musuclar strength and endurance, flexibility, motor ability, obesity and energy balance.

▲ **434-496 PHYSICAL EDUCATION FOR EXCEPTIONAL CHILDREN.** 3 credits. (Prerequisite: 434-342). Identification, evaluation, and remediation techniques basic to the development of effective physical education programs for educable mentally retarded children and children with specific learning disabilities; Progressive motor learning experiences related to body image, spatial relations, eye-hand coordination, and balance will be developed, applied and evaluated.

† **434-497 HISTORY OF PHYSICAL EDUCATION AND SPORT.** 3 credits. A historical study of the origins and development of physical education and sport.

† **434-498 SOCIAL-PSYCHOLOGY OF SPORT.** 3 credits. (Prerequisite: 416-260 Intro to Ed. Psych.). This course is concerned with the social and psychological aspects of participation in physical activity and sport. It examines the application of sociological and psychological knowledge and methodology within sport and the findings of such sport and related physical activity research.

434-499 COMPARATIVE PHYSICAL EDUCATION AND RECREATION. 3 credits. A comparative study of selected countries analyzing and comparing those social institutions which affect the development of physical education and recreation programs.

▲ PHYSICAL EDUCATION SKILLS AND TECHNIQUES

Physical Education majors must complete a minimum of 18 credits in techniques chosen from the list below. Eleven credits are required. The balance are to be chosen from the optional list.

The following courses include personal skill development, teaching sequences and strategies specific to the course selected. They have a limited enrolment and are open only to students enrolled in P.E. programs unless specially authorized by Associate Dean (Student Affairs).

Required Physical Education Skills and Technique Courses

Men (11 credits)

434-202	Intro. Rhythmic Activities
434-210	Educational Gymnastics
434-211	First Aid
434-212	Folk Dance or Intro. Creative
or **220**	Dance
434-213	Intro. Aquatics
434-214	Intro. Basketball (Men)
or**218**	Intro Volleyball (Men)
434-216	Intro. Gymnastics
434-217	Intro. or Adv. Track and Field
434-221	Intro. Wrestling
434-222	Summer Activities
434-223	Early Childhood Activities

Women (11 credits)

434-202	Intro. Rhythmic Activities
434-210	Educational Gymnastics
434-211	First Aid
434-212	Folk Dance

434-213	Intro. Aquatics
434-215	Intro. Basketball (Women)
or 219	Intro. Volleyball (Women)
434-220	Intro. Creative Dance
434-216	Intro. Gymnastics
434-217	Intro. or Adv. Track and Field
434-222	Summer Activities
434-223	Early Childhood Activities

Optional Physical Education Skills and Techniques Courses

Men (min.of 7 credits)

434-240	Winter Activities (X-country/Curling)
434-313	Adv. Aquatics (Men)
434-314	Adv. Basketball (Men)
434-335	Adv. Football
434-316	Adv. Gymnastics (Men)
434-329	Adv. Ice Hockey
434-321	Adv. Wrestling
434-318	Adv. Volleyball (Men)
434-225	Archery/Golf
434-226	Badminton/Squash
434-227	Field Games
434-228	Intro. Football
434-229	Intro. Ice Hockey
434-230	Lacrosse
434-231	Martial Arts
434-311	Prevention and Care of Athletic Injuries
434-232	Skiing
434-233	Soccer
434-234	Team Handball
434-235	Tennis/Racquetball

Women (min. of 7 credits)

434-323	Adv. Aquatics (Women)
434-315	Adv. Basketball (Women)
434-320	Adv. Creative Dance
434-310	Adv. Educational Gymnastics
434-338	Adv. Field Hockey
434-326	Adv. Gymnastics (Women)
434-319	Adv. Volleyball (Women)
434-225	Archery/Golf
434-226	Badminton/Squash
434-236	Field Games I
434-336	Field Games II
434-237	Ice Activities
434-238	Intro. Field Hockey
434-219	Intro. Volleyball or Intro.
or 215	Basketball
434-231	Martial Arts
434-311	Prevention and Care of Athletic Injuries
434-239	Rhythmic Gymnastics
434-232	Skiing
434-234	Team Handball
434-235	Tennis/Racquetball
434-240	Winter Activities (X-Country /Curling)

8 RELIGION AND PHILOSOPHY (415, 421, 422, 423)

Chairman: Professor W. Lawlor

Staff: M.T. Carley, N.G. Coccalis, T.A. Francoeur, J.P. Hilton, W. Lawlor, S. Nemiroff, F.X. Pinto, W.L. Ryan, H. Shantz

Cross-appointed: Y.G. Kelebay, J. Kutnick, G.H. McKay.

Department Office:
Education Building, Room 440
Tel: 392-8810

The Department of Religion and Philosophy in Education offers three-year Bachelor of Education programs (Major in Religious Education) in the areas of Catholic, Protestant, and Jewish Studies. It also offers options in these areas within the one-year Diploma in Education program for university graduates, as well as courses dealing with various issues in philosophy of education, religious education, and values.

In addition, the Department gives a 30 credit program leading to a Certificate in Moral and Religious Education for certified teachers and a M.A. Program in Philosophy of Education. (For further details on the M.A. program, consult the *Announcement of the Faculty of Graduate Studies and Research*).

Director of Catholic Studies: Prof. M. Carley
Director of Jewish Teacher Training Program: Prof. J. Kutnick

8.1 Teacher Education Programs BACHELOR OF EDUCATION,

MAJOR IN RELIGIOUS EDUCATION (Catholic)

Education-Required Courses 24 credits

SEMESTERS 1 and 2

411-204A	Introduction to Education	3 credits
416-260B	Introduction to Educational Psychology	3 credits
415-291B	Observation and Familiarization	1 credit

SEMESTERS 5 and 6

435-496D	Field Experience-Elementary and Secondary Schools	9 credits
415-392D	Guiding the Religious Response-Secondary	3 credits
415-398B	Philosophy of Catholic Education	3 credits
415-490D	Special Project	

448-301D	Orientation to Secondary School Teaching	0 credits

Education-Elective Courses 12 credits

Semester 3 or 4: 3 credits with field experience component
Semester 5: 6 credits. These courses may be selected from the list of available offerings (see page 17).

Departmental Selection Courses 9 credits

415-341 in Semester 4 and 6 credits which may be authorized in any semester except 5.

Academic Concentration 30 credits

Recommended courses are: 415-200, 290, 206, 207, 208, 391, 394 and 495.

Free Electives **15 credits**

May be taken in any semester except 5 and 6.

Note: Candidates for Catholic schools should seek advice from the Director of Catholic Studies.

MAJOR IN RELIGIOUS EDUCATION (PROTESTANT)

Education-Required Courses 24 credits

SEMESTERS 1 and 2

411-204A	Introduction to Education	3 credits
416-260B	Introduction to Educational Psychology	3 credits
421-291B	Observation and Familiarization	1 credit

SEMESTERS 5 and 6

435-496D	Field Experience-Elementary and Secondary Schools	9 credits
421-372D	Human and Religious Values in the Secondary School	3 credits
423-420B	Issues in Education	3 credits
421-490D	Special Project	2 credits
448-301D	Orientation to Secondary School Teaching	0 credits

Education-Elective Courses **12 credits**

Semester 3 and 4: 3 credits with field experience component.
Semester 5: 6 credits. These courses may be selected from the list of available offerings. (See p. 35)

Departmental Selection Courses 9 credits

421-332 in Sem. 3 and 6 credits which may be authorized in any semester except 5.

Academic Concentration 30 credits

For Semesters 1 and 2 the following six are recommended: 260-201A, 202B, 252A, 253B, 341A, 371B.

For Semesters 3 and 4 the following four are recommended: 260-345, -408, -410, -420

Free Electives **15 credits**
May be taken in any semester except 5 and 6.

Note: Candidates for Protestant schools should seek the advice of the Chairman of the Department.

MAJOR IN RELIGIOUS EDUCATION (JEWISH)

YEAR I

Academic Concentration 18 credits
Education-Required 411-204A (3 credits)
Education-Elective 3 credits
Free Electives 6 credits

YEAR II

Academic Concentration	12 credits
Departmental Selections	9 credits
Free Electives	9 credits

YEAR III

Education-Required Courses

416-260A	Introduction to Educational Psychology	3 credits
422-400B	Teaching Customs and Ceremonies	3 credits
422-401A	Teaching Biblical Literature I	3 credits
422-402B	Teaching Biblical Literature II	3 credits
422-404B	Teaching Hebrew/Yiddish-SecondLanguage	3 credits
423-420B	Issues in Education	3 credits
435-496D	Field Experience-Elementary and Secondary Schools	9 credits
448-301D	Orientation to Secondary School Teaching	0 credits

Education – Elective Course

One 3 credit course in sem. 5 or 6 to be chosen from the list on p. 35.

Note: Students who choose this option are referred to Prof. J. Kutnick, 3511 Peel Street (Tel. 392-8257) for advice and consultation.

DIPLOMA IN EDUCATION

RELIGIOUS STUDIES (JEWISH)

A program offered for candidates with an acceptable undergraduate degree and with appropriate background in Jewish Studies as a preparation for the teaching of Jewish subject matter at the elementary and secondary levels. Students will take the following REQUIRED COURSES.

422-400	– Teaching Customs and Ceremonies
422-401	– Teaching Biblical Literature I
422-402	– Teaching Biblical Literature II
422-404	– Teaching Hebrew/Yiddish-Second Language

and the following:

411-204 – Introduction to Education
423-420 – Issues in Education
416-260 – Introduction to Educational Psychology
435-496 – Field Experience
448-301 – Orientation to Secondary School Teaching

RELIGIOUS STUDIES (CATHOLIC AND PROTESTANT).

For information, see Section 5.1 in the Department of Secondary Education.

8.2 Program of Professional Development

CERTIFICATE IN MORAL AND RELIGIOUS EDUCATION

This 30 credit program was designed to meet the needs of both Catholic and Protestant teachers concerned with moral and religious education.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

Admission requirements:

1. Diploma of Collegial Studies or equivalent;
2. teacher training from an approved institution;
3. letter of recommendation from a competent authority;
4. personal interview may be required;
5. normally, the candidate should be actively engaged as a teacher or be in a position to teach moral and religious instruction in order to fulfill the practical requirements of the program.

Further information may be obtained from the Office of Continuing Education.

PROGRAM PROFILE

A program profile is established to correspond to the particular concerns and interests of the candidate. Courses are selected in consultation with the program director.

Part One: 9 credits are selected from courses in philosophy of education and in the teaching of religion and/or values at the elementary or secondary level. A special project is part of the requirements for the certificate.

Part Two: 18 credits distributed as follows:

1. 3 credits intended to provide a basic approach to the philosophy or history of religion.
2. 12 credits selected from courses in moral and ethical thinking, biblical studies, various questions central to the Christian religious tradition.
3. 3 credits exploring an issue pertinent to moral and religious education such as religion and science art, human sexuality.

Part Three: 3 credits elective.

8.3 Courses Offered

415 – CATHOLIC STUDIES

▲ **415-200 THE REVELATIONAL PROCESS TODAY.** 3 credits. An examination of God acting in time and space as recorded in the Jewish and Christian traditions.

▲ **415-204 HUMANITY BEFORE REALITY.** 3 credits. A philosophical exploration of the real in its being and its becoming, in its principles and its causes, in its unity and its diversity, in its truth and its goodness.

▲ **415-205 PHILOSOPHY OF RELIGION.** 3 credits. An investigation of the meaning of Religion and its relevance to our age.

▲ **415-206 THE CHURCH AND THE FUTURE.** 3 credits. Reflections on future roles and directions for the Church in the light of prevailing and countervailing trends in our society and the values which underlie them.

▲ **415-207 WHO IS CHRIST?** 3 credits. An open search for the authentic person of Christ – from Scriptures and present day manifestations.

▲ **415-208 IN SEARCH OF HUMANITY.** 3 credits. An exploration of the process of human knowing: human nature as self-conscious and self-determining.

▲ **415-209 THE SEARCH FOR AUTHENTICITY.** 3 credits. A search for meaning in contemporary living as reflected in selected authors.

▲ **415-290 GUIDE TO READING THE BIBLE.** 3 credits. An introduction to the Judaeo-Christian Scriptures with the emphasis upon reading and existential interpretation.

415-291 OBSERVATION AND FAMILIARIZATION. 1 credit. Observation, individual tutoring, and small group work in a secondary or elementary school environment. (Student activity to approximate 10 days in school setting; arrangements by Student Teaching Office in consultation with adviser).

415-322 GUIDING THE RELIGIOUS RESPONSE – EARLY CHILDHOOD (CATHOLIC STUDIES). 3 credits. Religious and moral phases in the development of the young child and an exploration of various programs and procedures for cultivating this development.

415-332 GUIDING THE RELIGIOUS RESPONSE – LATER CHILDHOOD (CATHOLIC STUDIES). 3 credits. Religious and moral phases in the develop-

ment of the elementary school child and an exploration of various programs and procedures for cultivating this development.

•▲ **415-391 THEOLOGY OF PROCLAMATION.** 3 credits. Man's responsibility and involvement in realizing the Divine Plan; how God chooses to depend upon man for the growth of His people towards Him.

415-392 GUIDING THE RELIGIOUS RESPONSE – SECONDARY. 3 credits. A study of developmental religious and moral life of the secondary school student, and of the programs and procedures designed to meet this development.

415-393 GUIDING THE RELIGIOUS RESPONSE – SECONDARY SCHOOL – AN ADVANCED STUDY. 3 credits. This course aims to examine in depth those programs currently under experimentation in our high schools. Serious study is to be made of adolescent religious response and those techniques, attitudes and personal approaches that may best enable the teacher to guide this response.

▲ **415-394 PHILOSOPHYOF GOD.** 3 credits. A critical study of the concept of God from a variety of religious, philosophic and mystical perspectives.

▲ **415-395 CHRISTIAN VALUES AND HUMAN ACTION.** 3 credits. A philosophical critical inquiry into the relationship between belief and conduct oriented towards the teacher and his/her role in moral education. Investigation of the ethical nature of the human act and the natural laws as the basis for morality.

▲ **415-396 SEMINAR IN CONTEMPORARY THEOLOGY I.** 3 credits. A reading seminar course in which current theological problems are discussed. Specific topics may differ from year to year.

▲ **415-397 VARIETIES OF CHRISTIAN WITNESS.** 3 credits. An exploration of divergent paths of Christian Witness as exemplified in the lives and writings of Thomas Merton, contemplative-critic, and Daniel Berrigan, poet-activist.

† **415-398 PHILOSOPHY OF CATHOLIC EDUCATION.** 3 credits. An exploration of the philosophy of Catholic education, and its relevance in the world today. *(Will include a field experience component).*

• **415-399 THE CATHOLIC SCHOOL OF THE FUTURE.** 3 credits. A projection into the future – new models for Catholic schools in the Province of Québec; a consideration of the identity of the Catholic school, the Protestant school, and the Neutral school of the future, in relation to the expectations of parents, students, teachers, and the larger community.

415-473 LIVING WITH INSIGHT. 3 credits. Examination of the shaping of contemporary living in the light of the gospel demands. The starting point will be the human experience in today's realities.

415-490 SPECIAL PROJECT. 2 credits. An independent undertaking requiring the preparation, execution, and retrospective analysis of a project focussed on practical activities in a school setting.

•▲ **415-491 THEOLOGICAL THEMES.** 3 credits. A study of several theological themes central to Christianity. Particular emphasis on faith and sacramental life.

▲ **415-494 ETHICS IN PRACTICE.** 3 credits. Fundamental principles of ethics as applied to current moral issues such as abortion, drugs, nuclear war, and discrimination.

•▲ **415-495 THE EUCHARIST.** 3 credits. A study of Jesus' Memorial meal and its significance in the Judaeo-Christian symbol system. The exploration of such questions as: what did Jesus do at the Last Supper and what meaning does this have for christians today?

415-496 SPECIAL PROJECT IN CURRICULUM AND INSTRUCTION (CATHOLIC). 3 credits. Faculty seminar and supervised research project to integrate theoretical course work, curriculum development, and classroom teaching in the area of moral and religious education in Catholic schools. (Course restricted to Certificate students only).

421 – PROTESTANT STUDIES

421-231 PROTESTANT PHILOSOPHY OF EDUCATION. 3 credits. The history of Protestant theories of education and their implications for the philosophy and curriculum of the Protestant schools of Québec.

421-291 OBSERVATION AND FAMILIARIZATION. 1 credit. Observation, individual tutoring, and small group work in a secondary or elementary school environment. (Student activity to approximate 10 days in school setting; arrangements by Student Teaching Office in consultation with adviser).

• ▲ **421-301 LIVING WITH QUESTIONS.** 3 credits. A survey of Old and New Testament literature, and a brief look at the basic ideas in major world religions. Discussion of current philosophical questions which arise out of such study and which confront teachers in modern society.

▲ **421-302 THEMES IN PROTESTANT EDUCATION.** 3 credits. An introduction to the major themes, in Protestant theology and in Biblical literature, applicable to the curricula approved for use in the Protestant schools of Québec. Themes include the meaning of faith, salvation, church, and the major persons and events in the Old and New Testaments.

421-322 HUMAN AND RELIGIOUS VALUES IN EARLY CHILDHOOD (PROTESTANT STUDIES). 3 credits. Programs and procedures for engaging ques-

tions of value and religion with young children in an active and non-doctrinal way, using a developmental approach.

421-332 HUMAN AND RELIGIOUS VALUES IN LATER CHILDHOOD (PROTESTANT STUDIES). 3 credits. Curriculum and instructional procedures for teaching elementary school children about values and religion in an active and non-doctrinal way using a developmental approach.

432-372 HUMAN AND RELIGIOUS VALUES IN THE SECONDARY SCHOOL. 3 credits. An enquiry into teaching methods in two areas: (1) Religion (as a phenomenon of human experience). Some of the the topics: the Bible, the Judaeo-Christian tradition, world religions. (2) The development of moral judgment in social and personal issues. Some of the techniques: values clarification, discussion leading, role playing and other means of stimulating moral reflection.

421-490 SPECIAL PROJECT. 2 credits. An independent undertaking requiring the preparation, execution, and retrospective analysis of a project focussed on practical activities in a school setting.

421-496 SPECIAL PROJECT IN CURRICULUM AND INSTRUCTION (PROTESTANT). 3 credits. Faculty seminar and supervised research project to integrate theoretical course work, curriculum development, and classroom teaching in the area of moral and religious education in Protestant schools. (Course restricted to Certificate students only).

422 – JEWISH STUDIES

422-250 INTRODUCTION TO TEACHING JEWISH CUSTOMS AND CEREMONIES. 3 credits. An exploration of Judaic concepts and their rationale, as well as religious laws and customs, as these are reflected in Jewish lifestyles and in the celebration of Jewish holidays. Attention will be given to the integration of this material into general studies programs at elementary and secondary levels.

422-400 TEACHING CUSTOMS AND CEREMONIES. 3 credits. (Prerequisite: permission of instructor). An exposure to all facets of Jewish practices, life cycle, calendar cycle, prayer, etc. Methods of applying this material to the Jewish Classroom. Sessions will be conducted in Hebrew.

422-401 TEACHING BIBLICAL LITERATURE I. 3 credits. (Prerequisite: 9 credits in Biblical Studies and permission of instructor). A survey of the narrative portion of the Pentateuch with a view to teaching this material in Jewish schools. An examination of some of the techniques presently being developed in Bible teaching. Sessions will be conducted in Hebrew.

422-402 TEACHING BIBLICAL LITERATURE II. 3 credits. (Prerequisite: 422-401 and permission of instructor). A survey of selected material in Prophets and Writings with a view to teaching this material in Jewish schools. An examination of some of the techniques presently being developed as they relate to Prophets and Writings. Sessions will be conducted in Hebrew.

422-404 TEACHING HEBREW/YIDDISH – SECOND LANGUAGE. 3 credits. (Prerequisite: Hebrew 340D or its equivalent and permission of instructor). A study of the most up-to-date methods and theories related to the teaching of hebrew and Yidish as a second language in both day schools and supplementary settings. Sessions will be conducted in Hebrew.

423 – PHILOSOPHY OF EDUCATION.

423-300 PHILOSOPHIES OF EDUCATION. 3 credits. An introduction to the ideas of various systematic philosophies of education with emphasis on the different positions taken on the nature and role of education and schooling in contemporary society.

▲ **423-309 THE RELIGIOUS QUEST.** 3 credits. An approach to the study of religious experience as expressed in humanity's major religious traditions, especially Christianity, Judaism, Islam, Hinduism and Buddhism.

▲ **423-324 VALUES AND HUMAN SEXUALITY.** 3 credits. Human sexuality in the context of society, moral and religious development. The course will focus on principles and goals underlying values and moral education as applied to sexual behaviour.

† **423-405 INTRODUCTION TO EDUCATIONAL CRITICISM.** 3 credits. A study of contemporary social and educational criticism, and its impact on the teacher and the school. Readings will be drawn from the works of critics representing a variety of viewpoints.

† **423-408 HUMAN VALUES AND EDUCATION.** 3 credits. A study of selected works dealing with moral, religious, social, and political values with a view to determining their relevance to basic educational issues. This course includes a field component.

† **423-420 ISSUES IN EDUCATION.** 3 credits. The examination of major educational issues against the background of the student's own field experiences. The relevant principles and findings of educational philosophy, history and psychology are treated.

9 EDUCATION IN SECOND LANGUAGES (431)

Chairman: Professor J.J. Rebuffot

Staff: F.H. Berthault, M.F. Buteau, M.B. Frith, A. Gagné, J. Lobelle, S.R. Palumbo, G. Terroux, J.A. White.

Education Building, Room 431A
Room 428 Tel.: 392-8863

The Department of Education in Second Languages offers programs in the teaching of English as a second language and French as a second language. These include a three-year program for CEGEP graduates leading to a Bachelor of Education (Major) degree, a one-year program for university graduates leading to a McGill Diploma in Education, and a 30-credit program of professional development for teachers leading to a Certificate in Second Language Teaching. All these programs prepare teachers for second language teaching at both elementary and secondary school levels.

The Department also offers courses in the teaching of Latin, German, Italian, and Spanish at the secondary level.

At the graduate level, programs are available leading to M.Ed. degrees in English and French as second languages (See Graduate Calendar for further information).

9.1 Teacher Education Programs BACHELOR OF EDUCATION

MAJOR IN THE TEACHING OF FRENCH (SECOND LANGUAGE)

Education-Required Courses 27 credits

SEMESTERS 1 and 2

411-204A	Introduction to Education	3 credits
416-260B	Introduction to Educational Psychology	3 credits
431-291B	Observation and Familiarization	1 credit

SEMESTERS 5 and 6

435-496D	Field Experience – Elementary and Secondary Schools	9 credits
431-344D	Teaching French as a Second Language – Elementary School	3 credits
431-372D	Teaching French as a Second Language – Secondary School	3 credits
431-490D	Special Project	2 credits
423-420B	Issues in Education	3 credits
448-301D	Orientation to Secondary School Teaching	0 credits

Education-Elective Courses 9 credits

Semester 3 and 4: 3 credits which should include a field experience component.
Semesters 5 and 6: 6 credits which may be selected from the list of available offerings.

Departmental Course Selections 9 credits

SEMESTERS 3 and 4

431-301	Linguistics Applied to the Teaching of French as a Second Language	3 credits
431-305	Psycholinguistics and Second Language Teaching	3 credits

SEMESTER 6

431-373	In-Depth Study of Curriculum Development in Second Languages	3 credits

Academic Concentration 30 credits

In consultation with the adviser, a student must choose 18 credits in the first year and 12 credits in the second year from courses offered by the Department of French Language and Literature, the Department of Linguistics, or the Centre d'Etudes Canadiennes-Françaises.

Free Electives 15 credits

In consultation with the adviser, a student may choose 5 courses (15 credits) at any time during the three years provided the requirements of the program are respected.

MAJOR IN THE TEACHING OF ENGLISH (SECOND LANGUAGE)

Education-Required courses **27 credits**

SEMESTERS 1 and 2

411-204A	Introduction to Education	3 credits
416-260B	Introduction to Educational Psychology	3 credits
431-291B	Observation and Familiarization	1 credit

SEMESTERS 5 and 6

431-347A	Teaching English as a Second Language – Elementary School	3 credits
431-358D	Teaching English as a Second Language – Secondary School	3 credits
435-496D	Field Experience – Elementary and Secondary School	9 credits
423-420B	Issues in Education	3 credits
431-490D	Special Project	2 credits
448-301D	Orientation to Secondary School Teaching	0 credits

Education-Elective Courses **9 credits**

One in semester 3 or 4 (field experience) 3 credits
Two in semesters 5 and 6, to be selected from the list of available offerings.

Departmental Selection Courses **9 credits**

SEMESTERS 3 and 4

431-311A Linguistics Applied to Teaching English as a Second Language 3 credits
431-305B Psycholinguistics and Second Language Teaching 3 credits

SEMESTER 6

431-373B In-Depth Study of Curriculum Development in Second Languages 3 credits

Academic Concentration **30 credits**

In consultation with the adviser, a student must choose 6 courses (18 credits) in the first year and 4 courses (12 credits) the second year from the Departments of English and Linguistics.

Free Electives **15 credits**

5 courses (15 credits) must be chosen by the students in consultation with their departmental adviser during any semester except semesters 5 and 6.

DIPLOMA IN EDUCATION

Two programs are available: in the Teaching of French as a Second Language and in the Teaching of English as a Second Language. Both programs lead to certification at elementary and secondary levels.

Required Courses **(18 credits)**

411-204 - Introduction to Education
423-420 - Issues in Education, or
415-398 - Philosophy of Catholic Education
416-260 - Introduction to Educational Psychology
448-301 - Orientation to Secondary School Teaching
435-496 - Field Experience, Elementary and Secondary School

EITHER A or B: (6 credits)

A
431-372 - Teaching French as a Second Language, Secondary School, and
431-344 - Teaching French as a S econd Language, Elementary School

B
431-358 - Teaching English as a Second Language, Secondary School, and
431-347 - Teaching English as a Second Language, Elementary School

ONE of the following: (3 credits)

431-301 - Linguistics Applied to the Teaching of French as a Second Language
431-311 - Linguistics Applied to Teaching English as a Second Language

ONE of the following: (3 credits)

431-304 - Sociolinguistics and Second Language Teaching
431-305 - Psycholinguistics and Second Language Teaching

9.2 Program of Professional Development

CERTIFICATE IN SECOND LANGUAGE TEACHING

This 30 credit program seeks to enhance the professional competence of certified teachers who are interested in teaching second languages and are sufficiently bilingual to do so. The program offers two options:

French as a Second Language, Elementary and Secondary
English as a Second Language, Elementary and Secondary

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

Admission requirements:

1. teacher training from an approved institution;
2. Diploma of Collegial Studies or equivalent;
3. language proficiency tests administered by the Department of Education in Second Languages;
4. letter of recommendation from a competent authority;
5. normally, the candidate should be actively engaged as a teacher of the language concerned or should begin teaching it during enrolment in the program so that a supervised practicum may be assured.

Further information may be obtained from the Office of Continuing Education

PROGRAM PROFILE

Required Courses **18 credits**

1. One of the following: (6 credits)
   Either (a) or (b)

   (a) French as a Second Language: 431-344, Teaching French as a Second Language - Elementary School (3 credits)

and

431-372 Teaching French as a Second Language – Secondary School – (3 credits)

(b) English as a Second Language: 431-347 Teaching English as a Second Language – Elementary School (3 credits)

and

431-358 Teaching English as a Second Language – Sec. School (3 credits)

2. *431-360 Practicum in Second Language Teaching I (3 credits)
   *431-361 Practicum in Second Language II (3 credits)
3. One of the following:
   431-301 Applied Linguistics (French) (3 credits)
   431-311 Applied Linguistics (TESL)
4. Selected Academic Course: (3 credits) Language, Linguistics or Literature

Elective Courses **(12 credits)**

431-302 Measurement and Evaluation in
431-312 Second Language Teaching (3 credits)
431-303 Media and Second Language Teaching (Didactique instrumentale) (3 credits)
431-304 Sociolinguistics and Second Language Teaching (3 credits)
431-305 Psycholinguistics and Second Language Teaching(3 credits)
431-307 Error Analysis and Second Language Teaching (3 credits)
431-340 Animation Techniques (3 credits)
431-345 Bilingual Class (3 credits)
431-346 Bilingual Class II (3 credits)
431-373 In-depth Study of Curriculum Development in Second Languages (3 credits)
431-380 Teaching French to Non-Francophone Adults (3 credits)
433-325 Children's Literature (3 credits)
425-366 Literature for Young Adults (3 credits)
424-394 Creative Dramatics for the Classroom (3 credits)
425-463 Reading Instruction – High School (3 credits)
433-465 Integrated Language Arts Program (3 credits)

9.3 Courses Offered

431-291 OBSERVATION AND FAMILIARIZATION. 1 credit. Observation, individual tutoring, and small group work in a secondary or elementary school environment. (Student activity to approximate 10 days in school setting; arrangements by Student Teaching Office inconsultation with adviser).

431-301 LINGUISTICS APPLIED TO THE TEACHING OF FRENCH AS A SECOND LANGUAGE. 3 credits. (Prerequisites: fluency in French; permission of instructor). Introduction to general linguistics; the nature and function of language; the relations of current linguistic theories to the selection, progression, presentation, and fixation of French Program content; examination and preparation of teaching and remedial materials related to French as a Second Language.

431-302 MEASUREMENT AND EVALUATION – TEACHING FRENCH AS A SECOND LANGUAGE. 3 credits. (Prerequisites: Introductory course in general or applied linguistics; permission of instructor). Principles of educational measurement applied to the teaching of French; formative and-summative evaluation; types of French tests and examination; analysis of commercially prepared tests practice in preparing, administration and scoring French tests and examinations serving various purposes; initiation to error analysis.

431-303 MEDIA AND SECOND LANGUAGE TEACHING. 3 credits. Language Laboratory and Audio-Visual Media: psychological and pedagogical rationale, assessment of potentialities and limitations in the process of second language teaching; manipulation of equipment, selection, adaptation and creation of materials; preparation of group and independent learning units, practice sessions. Courses offered either in English or French.

431-304 SOCIOLINGUISTICS AND SECOND LANGUAGE TEACHING. 3 credits. General applications of sociolinguistics to teaching a second language. Study of the local sociocultural scene and institutions. Use and preparation of teaching materials. Planning and monitoring a cultural activity with school children. Course offered either in English or in French.

431-305 PSYCHOLINGUISTICS AND SECOND LANGUAGE TEACHING. 3 credits. (Prerequisites: Introductory course in general or applied linguistics; permission of instructor). Exploration of areas in psycholinguistics relevant to second language teaching; theories of language acquisition, relationship between first and second language learning, student motivation and individual differences in second language learning, problems of meaning: various educational aspects of bilingualism.

- **431-306 PHONOLOGY AND THE TEACHING OF FRENCH AS A SECOND LANGUAGE.** 3 credits. (Prerequisites: One methods course in French and one basic course in general or applied linguistics). Intensive study of phonological and phonetic features of French as they are relevant to audiolingual approaches in teaching French as a second language; training in identifying and analyzing French phonological and phonetic difficulties or areas of interference; initiation to phonetic correction techniques.

431-307 ERROR ANALYSIS AND SECOND LANGUAGE TEACHING. 3 credits. (Prerequisites: One basic course in general or in applied linguistics). The contrastive analysis and the interlanguage hypotheses; nature and source of

linguistic transfer; the significance of errors; error analysis; general and specific implications of error correction in the secondlanguage classroom; linguistic and communicative competence. Course to be offered either in English or French.

† **431-311 LINGUISTICS APPLIED TO TEACHING ENGLISH AS A SECOND LANGUAGE.** 3 credits. (Prerequisite: permission of the instructor). Introduction to general linguistics: the nature and function of language; the relations of current linguistic theories to the selection, progression, presentation and fixation of English program content; examination and preparation of teaching, remedial and testing materials related to English as a Second Language.

431-312 MEASUREMENT AND EVALUATION AND TEACHING ENGLISH AS A SECOND LANGUAGE. 3 credits. (Prerequisites: An introductory course in general or applied linguistics; permission of the instructor). Principles of educational measurement applied to the teaching of ESL; types of ESL tests and examinations; analysis of commercially-prepared tests; practice inpreparing, administering, and scoring periodical examinations; qualities of good test items in ESL, from the point of view of short- and long-term objectives and levels of learning in ESL.

• **431-316 PHONOLOGY AND THE TEACHING OF ENGLISH AS A SECOND LANGUAGE.** 3 credits. (Prerequisites: One methods course (ESL) and one course in general or applied linguistics). Intensive study of phonological and phonetic features of ESL as they are relevant to audiolingual approaches in teaching ESL; training in identifying and analyzing ESL phonological difficulties or areas of interference; initiation to phonetic correction techniques.

431-321 LINGUISTICS APPLIED TO TEACHING MODERN LANGUAGES. 3 credits. (Prerequisites: Fluency in Spanish, German or Italian. Permission of instructor). Introduction to general linguistics: the nature and function of language; the relations of current linguistic theories to the selection, progression, presentation and fixation of program content in Modern Languages; examination and preparation of teaching, remedial, and testing materials related to teaching Modern Languages. Courses offered either in English or French.

431-322 TEACHING FRENCH AS A SECOND LANGUAGE – EARLY CHILDHOOD. 3 credits. Principles and procedures for teaching French as a second language to young children. (Prerequisite: Fluency in French).

431-332 TEACHING FRENCH AS A SECOND LANGUAGE – LATER CHILDHOOD. 3 credits. Various programs and procedures for teaching French as a second language in the elementary school. (Prerequisite: Fluency in French).

431-340 ANIMATION TECHNIQUES FOR SECOND LANGUAGE TEACHING. 3 credits. Exploration and demonstration of animating procedures and techniques for enlivening second language learning and for integrating it into the child's general development. Workshops and preparation of pedagogical materials suitable for use in the classroom. (Offered in French or English).

431-344 TEACHING FRENCH AS A SECOND LANGUAGE – ELEMENTARY SCHOOL. 3 credits. Principles of second-language teaching and their application to the teaching of French as a second language at the elementary school; an intensive study of the curriculum: objectives and development; special second-language teaching strategies and techniques; examination and preparation of teaching and testing materials; lesson planning; exercises in micro-teaching situations.

† **431-345 THE BILINGUAL CLASS I.** 3 credits. (Prerequisites: a high degree of French fluency, a course in French methodology and a course in applied linguistics). A study of the various models of bilingual education programs at the elementary school; an examination of the methods and materials used in primary grades to teach French language arts and to impart in French the other components of the curriculum of this level, to pupils whose first language is not French; planning teaching units; observation of bilingual classes and "French immersion classes."

431-346 THE BILINGUAL CLASS II. 3 credits. A study of the various models of bilingual education programs for later childhood; an examination of the methods and materials used at that level to teach French language arts and to develop French language skills via the teaching of the other components of the curriculum to pupils whose first language is not French; planning teaching units; observation of various types of "French immersion classes". (Pre-requisites: a high degree of French fluency and a course in applied linguistics).

431-347 TEACHING ENGLISH AS A SECOND LANGUAGE – ELEMENTARY SCHOOL. 3 credits. Objectives and curriculum; study of second-language teaching principles, methods and techniques related to students in the elementary schools.

431-358 TEACHING ENGLISH AS A SECOND LANGUAGE – SECONDARY SCHOOLS. 3 credits. Principles of ESL teaching; objectives and curriculum; language skills at secondary level; examination and preparation of teaching and testing materials; lesson planning.

* **431-360 PRACTICUM IN SECOND LANGUAGE TEACHING I.** 3 credits. Supervised practice in the application of language teaching and learning theories: focus on the design and use of teaching

units, the organization of communication activities, the selection and use of diagnostic and remedial materials. Course offered in either English or French. (Prerequisite: at least one course in the methodology of second language teaching). Subject to Senate approval.

* **431-361 PRACTICUM IN SECOND LANGUAGE TEACHINGII.** 3 credits. Supervised practice in the application of language teaching and learning theories: focus on curriculum development, and on the production of instructional, diagnostic and remedial materials, (Prerequisite: at least one course in the methodology of second language teaching). Subject to Senate approval.

431-372 TEACHING FRENCH AS A SECOND LANGUAGE – SECONDARY SCHOOL. 3 credits. Principles of second language teaching; objectives and curriculum; language skills at secondary level; instructional strategies; examination and preparation of teaching and testing materials; the use of audio-visual aids. lesson planning; training in micro-teaching situations.

431-373 IN-DEPTH STUDY OF CURRICULUM DEVELOPMENT IN SECOND LANGUAGES. 3 credits. Guiding principles and current practices of individualized, programmed instruction team-teaching, continuous progress, modular approach independent study as applied to second language teaching; observation and critical study of new experimental approaches.

431-378 LATIN CURRICULUM AND INSTRUCTION – SECONDARY SCHOOL. 3 credits. Objectives and curriculum; instructional strategies; use of teaching materials; preparation of teaching and testing materials; lesson planning; training in micro-teaching situations.

431-379 MODERN LANGUAGE CURRICULUM AND INSTRUCTION (GERMAN, ITALIAN, SPANISH) – SECONDARY SCHOOL. 3 credits. Principles of modern-language teaching; objectives and curriculum; instructional techniques; use of audio-visual aids; preparation of teaching and testing materials; lesson planning; training in micro-teaching situations.

431-380 TEACHING FRENCH TO NON-FRANCOPHONE ADULTS. 3 credits. Application of the theories and procedures of adult education to the teaching of French to non-Francophone adult learners. Activities include setting objectives for various needs and different levels of learning, designing specific curriculum, and preparing materials. Attention will be given to different approaches to teaching language and communication skills to adults, and to developing cultural insights. Prerequisite: Fluency in French.

431-449 SPECIAL TOPIC IN SECOND LANGUAGE TEACHING. 3 credits. Selected topics in second language teaching. Possible topics include communicative competence, inter language/error analysis and functional-notional approach to second language teaching. Course offered either in English or French. Prerequisite: Competence in the language of instruction.

431-490 SPECIAL PROJECT. 2 credits. An independent undertaking requiring the preparation, execution, and retrospective analysis of a project focussed on practical activities in a school setting.

10 ADMINISTRATION AND POLICY STUDIES IN EDUCATION (411)

Chairman: Prof. R.H. Tali

Staff: Profs. G.J. Anderson, C. Barnabé, D.A. Burgess, M. Burns, T.O. Eisemon, G. Flower, R. Ghosh, M. Gillett; N. Henchey, G.B. Isherwood, J.K. Jobling, M. Laferrière, C. Lusthaus, R. Magnuson.

Cross-appointed: R. Butt, F.X. Pinto

Department Office:
Duggan House, Room 105
Tel: 392-8833

The Department of Administration and Policy Studies in Education offers undergraduate courses in the areas of Québec education, comparative education, history of education, sociology of education and policy studies. It also gives an in-service program leading to a Diploma in Educational Administration. The Department's major program activities are at the graduate level and include M.A. programs in history of education and comparative education, and M.A. and M.Ed. programs in educational administration. (For details, see the *Announcement of the Faculty of Graduate Studies and Research*).

The Department is also involved in a variety of in-service activities with administrators and teachers through the Division of Educational Leadership (DEL) and in research projects through the Office for Research on Educational Policy (OREP).

10.1 Program of Professional Development

DIPLOMA IN EDUCATIONAL ADMINISTRATION

This in-service program is designed to meet the needs of educational administrators who wish to obtain further knowledge and expertise in their field. The focus for this Diploma is practice and will include both practical applications and

critical appraisal of present practices in educational administration. The program has been developed at the request of school administrators and is expected to appeal to both school personnel (Principals, Vice-Principals, etc.) and to those engaged in other types of educational administration (school board officers, CEGEP officials, adult education directors, finance officers, etc.)

The program has been developed in a sequential manner and will be available on a part-time basis during the Summer Sessions and intervening evening winter sessions when enrolment permits.

Admission requirements:

1. a baccalaureate or equivalent;
2. at least two years of attested experience as an administrator in the educational milieu; preference will be given to those currently engaged in full-time administrative work.

Application forms and further information may be obtained from:

Diploma Program
Administration and Policy Studies
Duggan House
3724 McTavish Street
Montreal, PQ, H3A 1Y2

PROGRAM PROFILE

Required Courses **24 credits**

411-511 General Administrative Practice (6 credits)
411-530 Administration of Education in Québec (3)
411-542 Curriculum Planning in Public Ed. (3)
411-544 Resource Utililzation in Education (3)
411-552 School Personnel Practice (3)
411-562 Planning for Change in Public Education (3)
411-582 Social Groups in Administration (3)

Elective Courses **6 credits**

Selected from the Continuing Education offerings, with the approval of the department.

10.2 Courses Offered

411-202 EDUCATIONAL AND ADMINISTRATIVE INSTITUTIONS IN THE NORTH. 3 credits. An integration of the inter-dependency of the various institutions affecting northern education, including the line of interrelationship from the school board to the Ministry of Education. Relationships of non-educational institutions, such as the Co-ops, Health and Social Services, to educational services. Certain southern educational institutions are studied and related to the North. Prerequisite: fluency in Inuttitut and permission of the department.

•† **411-203 EDUCATION AND SOCIETY.** 3 credits. This course focuses broadly on education, emphasizing its place in present-day Québec and Canadian society. The sources of support, the controls imposed upon educators, and the relationship of education to the occupational structure are analysed. Educational opportunity, social mobility, and the impact of social stratification on educational policies are discussed.

411-204 INTRODUCTION TO EDUCATION. 3 credits. An overview of present day educational practices and policies with particular reference to the schools of Québec; designed to provide the student with a personal frame of reference within which subsequent academic and professional studies preparatory to a teaching career may be effectively evaluated and pursued.

† **411-205 SOCIOLOGY OF EDUCATION – AN OVERVIEW.** 3 credits. An introductory course, designed to present studies with a broad sociological perspective of education. Topics will include the school as a social system and the influence of social variables such as race, sex, ethnicity, and socio-economic status on teaching and learning. This course includes a field component.

† **411-300 THE SCHOOL AS AN ORGANIZATION.** 3 credits. Prerequisite: 414-203 or 414-205. The structures and functions of schools at various levels; pre-school to university. The relationships of schools as organizations to other organizations; school size, complexity of organizational structure;

† **411-308 SOCIOLOGY OF THE CLASSROOM.** 3 credits. Pre-requisites: 414-203 or 414-205 or an introductory course in Sociology. The classroom as a social system, variations in socialization systems. Teacher's influence on child's self-concept and achievement, level of aspiration, and social mobility. This course includes a field component.

411-392 SCHOOL LAW. 1 credit. Certification course to give prospective teachers an understanding of the framework of education in the Province of Québec. Computer assisted instruction. (Prerequisite: permission of the department).

† **411-394 ADMINISTRATION OF EDUCATION IN QUÉBEC.** 3 credits. An introduction to the system of administration and decision-making in the public schools of the province as these relate to teachers. Consideration will be given to staff relationships, the politics of education, finance and administrative roles at all levels of the system.

† **411-402 COMPARATIVE EDUCATION.** 6 credits. A study and comparison of recent education developments in England, France, Germany, the Soviet Union, and the United States.

† **411-403 EDUCATION OF MINORITY GROUPS.** 3 credits. An examination of the education of minorities in Canada (with emphasis on Québec), in historical, sociological and psychological perspectives. Both immigrant groups and native people will be studied. This course includes a field component.

† **411-404 THE RISE OF PUBLIC EDUCATION IN THE 19TH CENTURY.** 3 credits. The impact of industrialism, nationalism and colonialism on the development of public education in Western society.

† **411-405 QUEBEC'S EDUCATIONAL PAST.** 3 credits. Educational developments in Québec from the French regime to the Quiet Revolution.

† **411-406 INTRODUCTION TO COMPARATIVE EDUCATION.** 3 credits. Study of the dynamics of education in various societies throughout the world. The ideas and approaches of several disciplines are utilized in order to gain an understanding of educational systems and problems in comparative perspective.

† **411-408 EDUCATION IN CONTEMPORARY QUEBEC.** 3 credits. Educational developments in Québec since the Quiet Revolution.

† **411-409 WOMEN AND EDUCATION.** 3 credits. This course explores the school as a sexist institution in both historical and contemporary perspectives; identifies women's contributions to intellectual history and the development of educational ideas and practices; analyses problems such as those of prejudice in schools, women teachers and promotion, sex role sterotypes in texts. Interdisciplinary approach. Guest speakers.

† **411-410 WOMEN IN HIGHER EDUCATION.** 3 credits. Examines the roots of prejudice against women in the ivy-covered halls of learning. Considers women's struggles for intellectual equality in historic and contemporary perspectives. Interdisciplinary approach.

† **411-450 CURRICULUM ALTERNATIVES.** 3 credits. (Pre-requisite: permission of the instructor). An examination of various curriculum designs which cross boundaries of subject, method and culture, and the applications to programs for different populations of students.

411-461 SOCIETY AND CHANGE. 6 credits. A consideration of major western social institutions including education, medicine, churches, social welfare, marriage and the family, their relationships to the process of change. The evolution of social change is seen from an historical as well as a current point of view.

411-499 RESEARCH SEMINAR ON WOMEN'S STUDIES. 6 credits. (Prerequisites: Open to U3 students following the Minor in Women's Studies and to others with permission of the instructor). A research seminar on selected topics of interest to students in the Minor Program in Women's Studies. Examples of topics are the status of women in school, work, and society, gender identity, and the roles of women in cross-cultural perspective. As part of the course requirements students will prepare a research paper under the supervision of one or more members of staff.

411-511 GENERAL ADMINISTRATIVE PRACTICE. 6 credits. An overview of the administrative practice and procedure in use in education today. Relevant theory to practice relationship will be explored.

411-530 ADMINISTRATION OF EDUCATION IN QUÉBEC. 3 credits. A consideration of the system of education in Québec. The focus will be on the basic legal framework of education in Québec and the principal legal documents, and on the educational system in inter-action with other social systems and society as a whole.

411-542 CURRICULUM PLANNING IN PUBLIC EDUCATION. 3 credits. Study of the means for developing and implementing the school curriculum in education today.

411-544 RESOURCE UTILIZATION IN EDUCATION. 3 credits. A focus on the resources available to administrators, finances and the computer in day to day operations will be considered relative to Québec today.

411-552 SCHOOL PERSONNEL PRACTICES. 3 credits. Present personnel practices and procedures relevant to the current Québec scene. Emphasis on hiring, probation, supervision, dismissal and negotiations for education employees.

411-562 PLANNING FOR CHANGE IN PUBLIC EDUCATION. 3 credits. The political and social implications for administrative change in public education. The process and procedure for planned change in education.

411-582 SOCIAL GROUPS IN ADMINISTRATION. 3 credits. The dynamics of the many groups affecting the education scene today; including Parent Committees, School Committees, School Boards, Public Action Groups and others.

11 EDUCATIONAL PSYCHOLOGY AND COUNSELLING (412,414, 416, 432, 449)

Chairman: Professor H.A. Stutt

Staff: L.B. Birch, R. Boulianne, R. Bracewell, P. Burpee, G.F. Cartwright, J.M. Cram, P. Cranton, J. Derevensky, J. Donald, F.R. Dumont, R. Edwards, W. Floch, C. Frederiksen, G. Geis, H. Gougeon, G. Groen, J. Hanrahan, J.G. Harris, A. Hum, R. Lavers, D. Ling, E. Lusthaus, T.J. Maroun, G. McKay, D.D. Paré, E. Pedersen, S. Pupo, S. Rapagna, G. Rejskind, B.M. Shore, D. Sokolyk, R. Stevens, W.M. Talley, L. Tedford, L. Tetreault, G.E. Torbit, R. Wensley, C. Weston, W.A. Wilkinson, J.E.M. Young.

Cross-Appointed: Prof. M.W. Aulls, T. Francoeur, F. Greene, L. Haworth, G.C. Mager, G. Patton, G. Reid.

Department Office:
Education Building, Room 504
Tel: 392-8800

The Department of Educational Psychology and Counselling is responsible for a variety of undergraduate courses in the areas of learning and development, special education, behaviour, and educational media, and the gifted.

In the field of professional development, the Department offers diploma and certificate programs in Human Relations and Family Life Education, College Teaching, Educational Media, Special Education and the Psychology and Education of the Gifted.

In addition, there are a number of graduate programs leading to M.A. and M.Ed. degrees in educational psychology, special education and counselling, as well as programs at the Doctoral level. (For further information, consult the *Announcement of the Faculty of Graduate Studies and Research).*

Special services offered by the Department include the Division of Educational Computer Applications (DECA) and a project in pre-school child development (Ready-Set-Go)

11.1 Programs of Professional Development

DIPLOMA IN COLLEGE TEACHING

The program leading to the Diploma in College Teaching has been developed as a flexible 30-credit program intended to meet the needs of college teachers. The program consists of two core courses taken by all (6 credits), options (18 credits), and a practicum taken by all (6 credits)

Admission requirements:

1) a baccalaureate or equivalent;
2) a teaching position at the college level.

Further information may be obtained from:

Associate Director of College-Level Programs
Faculty of Education
3700 McTavish Street
Montreal, PQ, H3A 1Y2
(514) 392-8807

PROGRAM PROFILE

Required Courses **12 credits**

449-587 Managing a Learning System (3 credits)
449-588 Instructional Design in Higher Education (3 credits)
449-592 Practicum in the College Setting (6 credits)

Electives Courses 18 credits

449-584 Laboratory Teaching (3 credits)
449-589 Teaching and Learning: Systematic Instruction in Higher Education (3 credits)
*449-590 Studies in the Discipline for More Effective Teaching I (3 credits)
*449-591 Studies in the Discipline for More Eccective Teaching II (3 credits)

*Provided arrangements can be made with the appropriate subject department.

The above courses are representative of the options available to candidates in the program. In addition, qualified candidates may register for courses affording field experience in business, industry or nursing. Courses may also be selected from those offered by the various departments of the Faculty of Education as well as those of other Faculties and Schools in the university, with the approval of the Associate Director of College Level Programs and through the cooperation of the department concerned.

DIPLOMA IN THE EDUCATION AND PSYCHOLOGY OF THE GIFTED

This program is designed to provide theoretical background, practical training and experience in the nature of giftedness and the differential education of the gifted in a variety of settings. A core of courses is supplemented by a research project and options in areas of the student's interest.

Admission requirements to be eligible for admission students must:

1. hold a recognized undergraduate degree with an overall standing of B, or equivalent;
2. have worked successfully with children;
3. show evidence they possess at least one area of competence, expertise and continuing interest either in a traditional discipline or in an interdisciplinary field of study;
4. possess a knowledge of introductory statistics;
5. have completed teacher training from an approved institution or possess comparable professional training in a field such as counselling, child psychology, or social work; and
6. provide transcripts, at least 2 reference letters, and a personal statement in support of the above.

Advanced standing

Required courses which duplicate a course previously taken may, with the program director's written approval, be replaced by an elective.

Graduation requirement

Every course taken for credit toward the Diploma must be passed with a grade of B- or higher and an overall GPA of at least 3.0.

Program Profile

In general, students should take the groups of courses in sequence.

Group 1 — 9 credits

414-249 Creativity and its Cultivation
414-346 Talented and Gifted Students
416-304 Measurement and Evaluation in Education

Group 2 — 12 credits

416-396 Nature of Intelligence
411-450 Curriculum Alternatives
414-457 Practicum in the Education of the Gifted
416-535 Psychology and Instructional Design

Group 3 — 3 or 6 credits

One or more elective courses: either an academic discipline other than psychology or an advanced course in the curriculum and instruction of a discipline.*

Group 4 — 3 or 6 credits

448-497 Individual Research Project 3 credits or
448-498 Individual Research Project 6 credits.

Total: 30 credits

*A list of recommended electives is available from the program director.

To find full descriptions of courses consult sections of this calendar as follows: for courses beginning with 414- and 416-, Educational Psychology and Counselling; 411-, Educational Administration and Policy Studies; 448-, B.Ed. Core Courses.

Further information is available from the department. Telephone: 392-8803.

DIPLOMA IN HUMAN RELATIONS AND FAMILY LIFE EDUCATION

This program is intended to train people who wish to conduct Family Life Education programs in schools, hospitals, religious institutions, and social services centres. The program is also designed for people who, though qualified to work in their respective professional domains, may wish to acquire auxiliary skills in basic human communication, group animation and effective interviewing.

A total of 30 credits is required to complete the program. Students should consult with advisers concerning appropriate course profiles.

Admission requirements:

1. a baccalaureate or equivalent;
2. two letters of recommendation.
3. a biographical sketch.

Further information may be obtained from the Office of Continuing Education.

PROGRAM PROFILE

Required Courses — **18 credits**

412-401 Principles of Helping Relationships (3 credits)
412-402 Group Processes and the Individual (3 credits)
412-403 Human Sexuality for the Helping Professions (3 credits)
416-460 Human Development (3 credits)
411-461 Society and Change (6 credits)

Elective Courses — **12 credits**

412-403 Practicum in Interviewing Skills (3 credits)
412-405 Crisis Intervention Processes (3 credits)
412-406 Organizational Development (3 credits)
412-407 Practicum in Group Leadership Skills (3 credits)
412-408 Seminar in Special Topics (3 credits)
412-409 Individual Reading Course (3 credits)
416-462 Small Group Processes and the Family (3 credits)
416-463 Personal Awareness and Leadership in Family Life Education (3 credits)
416-464 Family Communication (3 credits)

CERTIFICATE IN EDUCATIONAL MEDIA

The Educational Media Centre of the Faculty of Education offers a 30 credit McGill Certificate in Educational Media. The program is aimed at

teachers, instructors at all levels, business trainers, media coordinators and others interested in the design, production, evaluation, utilization and administration of instructional media.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

Admission requirements:

1. Diploma of Collegial Studies or equivalent;
2. letter of recommendation from employer.

Further information may be obtained from the Office of Continuing Education.

PROGRAM PROFILE

1. **Required Courses: Theory (12 credits)**
   - 432-204 – Educational Media I (3 credits)
   - 432-209 – Media and Instructional Design (3 credits)
   - 432-220 – Graphic Design for Instructional Materials (3 credits)
   - 432-304 – Educational Media II (3 credits)
2. **Options: Production – 2 of the following (6 cr.)**
   - 416-310 – Computer Applications in Education
   - 432-205 – Film Production and Film Criticism
   - 432-303 – Photography I
   - 432-306 – Educational Television I
3. **Electives: 4 of the following (12 credits)**
   - 416-304 – Measurement and Evaluation in Education (3 credits)
   - 416-310 – Computer Applications in Education (3 credits)
   - 416-xxx – Additional course in School Computer Applications (3 credits)
   - 426-296 – Basic Design (3 credits)
   - 432-205 – Film Production and Film Criticism (3 credits)
   - 432-303 – Photography I (3 credits)
   - 432-305 – Advanced Film Production (3 credits)
   - 432-306 – Educational Television (3 credits)
   - 432-403 – Photography II (3 credits)
   - 432-404 – Contemporary Developments in Educational Media (3 credits)
   - 432-405 – Independent Project (6 credits)
   - 432-406 – Management of Educational Media Services (3 credits)
   - 432-409 – Special Topics in Educational Media (3 credits)
   - 432-440 – Media Curriculum and Instruction: Elementary (3 credits)
   - 432-470 – Media Curriculum and Instruction: Secondary (3 credits)

CERTIFICATE IN SPECIAL EDUCATION

This 30 credit program is designed to prepare teachers to teach exceptional children. It provides a sequence of courses which will ensure a sound foundation for any teacher in Special Education and at the same time permits successful candidates to meet the minimum academic requirements of the Ministry of Education (Québec) for the awarding of the Québec Diploma in Special Education. It is also intended to encourage and provide the opportunity for teachers of regular classes to broaden their knowledge of exceptional children, to be more aware of the psychology behind the practice of Special Education and to improve their skills in individualized teaching.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified teachers.

Admission requirements:

1. Diploma of Collegial Studies or equivalent;
2. teacher training from an approved institution;
3. letter of recommendation from a competent authority;
4. personal interview may be required.

Further information may be obtained from the Office of Continuing Education.

PROGRAM PROFILE

Required Courses **24 credits**

- 414-340 Education of Exceptional Children (3 credits)
- 414-341 General Methods in Special Education (3 credits)
- 414-342 Organization of Special Education Programs (3 credits)
- 414-343 Introduction to Diagnosis and Assessment (3 credits)
- 414-344 Practicum in Diagnosis and Assessment (3 credits)
- 414-440 Cognitive and Psychomotor Problems in Exceptional Children (3 credits)
- 414-441 Behaviour Problems of Exceptional Children (3 credits)
- 414-442 Psychology of Learning Problems (3 credits)

Elective Courses **6 credits**

- 414-346 Talented and Gifted Students (3 credits)
- 414-443 School, Home and Community Relations in Special Education (3 credits)
- 414-444 Materials in Special Education (3 credits)
- 414-445 Vocational Habilitation of Exceptional Children (3 credits)

414-446 Special Topics in the Education of Exceptional Children (3 credits)

In addition to the above, other elective courses may be approved by the Program Director.

11.2 Courses Offered

412 – COUNSELLING

•† **412-304 GROUP PROCESSES.** 3 credits. This course is intended to make the student familiar with group organization and operation as they relate to schools and other settings. Interpretation of group interaction and typical roles played by members in groups. (Limited Enrolment).

The following courses 412-401 to 412-409 are offered in connection with the Diploma in Human Relations and Family Life Education – see page 24:

412-401 PRINCIPLES OF HELPING RELATIONSHIPS. 3 credits. A course in the basic principles of human relationship and communication skills, approached from a theoretical and experiential viewpoint. An emphasis will be given to training in basic listening skills, interviewing techniques, and the interpretation of non-verbal behaviour in communication.

• **412-402 GROUP PROCESSES AND THE INDIVIDUAL.** 3 credits. A laboratory course in which participants observe individual dynamics within a group setting as well as understand the developmental phases of the group. Participants will be encouraged to experiment with their own behaviour, in order to increase their own awareness of functioning.

• **412-403 HUMAN SEXUALITY FOR THE HELPING PROFESSIONS.** 3 credits. This course will explore historical, biological, anthropological, psychological and sociological perspectives of human sexual development. Sexual dysfunctions and approaches to sex therapy will be discussed. Attitudes toward sexuality held by professional helpers will be examined relative to their implications for the learning and teaching of human sexuality and sex therapy.

• **412-404 PRACTICUM IN INTERVIEWING SKILLS.** 3 credits. Pre-requisite: 412-401. This course will enable students to become practitioners in the field of Applied Social Sciences. Theoretical principles of the helping relationship will be applied in particular situations. Demonstration, lecture, role-playing and psychodrama techniques will be used.

• **412-405 CRISIS INTERVENTION PROCESSES.** 3 credits. Instructionin the skills of working with crisis situations involving persons emotionally disturbed, suicidal, or alcoholic, and those who are on drugs or experiencing emotional trauma, as well as other problems. Attention will be given to identification of referral sources and the writing of reports.

• **412-406 ORGANIZATIONAL DEVELOPMENT.** 3 credits. This course will critically examine the interrelationships of individuals, groups, and organizational systems. Various models for understanding group and individual functions within an organization will be studied. Specific intervention techniques by the practitioner to effect changes within the organization will be identified.

• **412-407 PRACTICUM IN GROUP LEADERSHIP SKILLS.** 3 credits. Pre-requisite: 412-402. This course will be concerned with the practical aspects of group leadership, group design and planning. Candidates will set up groups, conduct such groups over a number of sessions, and assess these groups according to the theoretical models covered in the pre-requisite course.

412-408 SEMINAR IN SPECIAL TOPICS. 3 credits. The content of the seminar will vary from year to year and will be announced prior to registration. The seminar may be given by a single instructor or by a group, as the occasion warrants. Permission must be obtained from the department before registration.

412-409 INDIVIDUAL READING COURSE. 3 credits. By arrangement with individual instructor. Permission must be obtained from the Department before registration.

412-442 VOCATIONAL GUIDANCE FOR CLASSROOM TEACHERS. 3 credits. An introduction to vocational guidance for secondary school teachers. Student needs and available information concerning work requirements, employment-trends, and occupational training programs. Means of developing productive relationships between teachers and guidance personnel. Special emphasis on occupational guidance for students not going to college.

414 – SPECIAL EDUCATION

414-209 LEARNING AND BEHAVIOUR DIFFICULTIES OF CHILDREN: 3 credits. An introduction to the study of children who require adaptive teaching-learning procedures. Analysis of their special needs will include examination of the etiological and environmental factors affecting learning and behaviour. In addition, prescriptive instructional strategies and techniques for classroom management will be discussed.

414-211 SOCIAL AND EMOTIONAL DEVELOPMENT AND BEHAVIOR. 3 credits. Intensive training in observation of the development and behavior of children as individuals and as members of modern Inuit society. Study of educational implications of both common and divergent behavior in view of Inuit and Qallunaat culture.

Development of behavioral checklists and relevant teaching practices. Prerequisite: fluency in Inuttitut. Limited to students enrolled in Certificate in Native and Northern Education.

414-212 PERCEPTUAL MOTOR DEVELOPMENT AND TEACHING. 3 credits. Observation of perceptual-motor aspects of Inuit child development at the readiness and early primary level. Application of observations to teaching methods and materials, curriculum, classroom management and evaluation. Prerequisite: fluency in Inuttitut. Limited to students enrolled in Certificate in Native and Northern Education.

414-240 CRAFT COURSE. (No credit.) A workshop approach intended to show how learning and behaviour may be helped by skills developed through craft work; includes use of wood, leather, metals and ceramics as well as demonstrating how to improvise with commonplace materials. This course is usually taken in Phase I. Valid for Diploma in Special Education only.

† **414-249 CREATIVITY AND ITS CULTIVATION.** 3 credits. Survey of recent research and theory concerning creativity, with special attention to creativity in school-age children; treats problems of defining and assessing creativity, the relationship between creativity and intelligence, the nature of the creative process and personality and creative behaviour. Methods of enhancing creativity will be examined, emphasizing ways of facilitating creativity in a school setting. *(Includes a field experience component.)*

† **414-340 EDUCATION OF EXCEPTIONAL CHILDREN.** 3 credits. Introduction to the education of exceptional children; characteristics, classification, needs of exceptional children; developmental and corrective programs; areas of current research.

† **414-341 GENERAL METHODS IN SPECIAL EDUCATION.** 3 credits. Class organization, teaching methods, assessments of educational level, setting objectives, grouping, individual programming, and reporting. (Enrolment is limited to twenty students).

414-342 ORGANIZATION OF SPECIAL EDUCATION-PROGRAMS. 3 credits. (Pre-requisite: 414-341). Needs of EMR, slow-learning and emotionally disturbed children: characteristics, school programs, evaluation of progress; integration into the community.

† **414-343 INTRODUCTION TO DIAGNOSIS AND ASSESSMENT.** 3 credits. Principles and procedures in the evaluation of pupil growth and achievement. Emphasis on the use and interpretation of tests to be given by the class teacher.

414-344 PRACTICUM IN DIAGNOSIS AND ASSESSMENT OF LEARNING PROBLEMS. 3 credits. (Prerequisite: 414-343). A supervised practicum in the use of various tests and measures in learning problems of children; developing prescriptive teaching programs.

† **414-346 TALENTED AND GIFTED STUDENTS.** 3 credits. The psychology and education of exceptionally able children. Definitions, assessment, types of programs and goals, and teacher requirements. The course combines theoretical background and practical concerns. *(Includes a field experience component.)*

414-440 COGNITIVE AND PSYCHOMOTOR PROBLEMS OF EXCEPTIONAL CHILDREN. 3 credits. (Pre-requisite 414-341, 342) Teaching methods appropriate to individual and small group instruction to overcome a variety of learning problems. Emphasis on perceptual difficulties.

† **414-441 BEHAVIOURAL PROBLEMS OF EXCEPTIONAL CHILDREN.** 3 credits. Teaching methods appropriate to the needs of pupils with emotional and behaviour problems. Methods presented will include behaviour modification techniques.

414-442 PSYCHOLOGY OF LEARNING PROBLEMS. 3 credits. The Learning Process; personality development, perceptual dysfunction, behaviour disorders and other handicapping conditions related to learning.

414-443 SCHOOL-HOME-COMMUNITY RELATIONS IN SPECIAL EDUCATION. 3 credits. Influence of home and community on the child, teacher-parent interviews, reporting, cooperation with hospital clinics, other professionals, etc.

414-444 MATERIALS IN SPECIAL EDUCATION. 3 credits. A critical examination of materials available for special educational programs, commercial and teacher-made materials; the application of A-V techniques to Special Education.

414-445 VOCATIONAL HABILITATIONOF EXCEPTIONAL CHILDREN. 3 credits. Vocational requirements of non-academic children, vocational preparation as a responsibility of the special class teacher, placement services, follow-up.

414-446 SPECIAL TOPICS IN THE EDUCATION OF EXCEPTIONAL CHILDREN. 3 credits. A seminar or workshop approach to selected topics in the field of Special Education. Examples of possible topics include Language Development, Educable Retarded Adolescents, and Behaviour Modification.

414-457 PRACTICUM IN THE EDUCATION OF THE GIFTED. 3 credits. Workshops and practical experience in planning, providing, and evaluating educational offerings to gifted students in supervised demonstration class settings and in small groups. (Prerequisites: 414-346 required; 414-249 and 414-492 recommended.)

416 – Educational Psychology

•† **416-201 THE NATURE AND CONDITIONS OF SCHOOL LEARNING.** 3 credits. Learning and behaviour. Maturation and learning. Classical conditioning and its adequacy as a model for classroom teaching. Operant conditioning and basic learning processes. Verbal learning and concept formation. Remembering and forgetting. Transfer of learning and problem solving.

• **416-204 A GENERAL INTRODUCTION TO PSYCHOLOGY FOR TEACHERS.** 3 credits. This course is designed for students who have had little or no previous psychology. Topics dealt with are those considered most likely to be useful for an understanding of other courses in Educational Psychology offered by the Department. The course will deal with Learning, Intelligence, Motivation, and Personality.

† **416-208 THE DEVELOPMENT OF PERSONALITY AND SOCIAL BEHAVIOUR IN THE SCHOOLAGE CHILD.** 3 credits. This course will deal with personality, social behaviour, and moral development from nursery school up to but not including adolescence. The emphasis will be on aspects of personal and social development that are related to the process of schooling with attention to teacher attitudes and practices in dealing with the problems of children. *(Includes a field experience component.)*

416-214 CHILD DEVELOPMENT. 6 credits. The social, emotional, psychological and intellectual growth and development of the young child; guided observation of children; seminars, reports; individual readings.

416-260 INTRODUCTION TO EDUCATIONAL PSYCHOLOGY (SECONDARY LEVEL). 3 credits. An introduction to how concepts and principles from research and theory may be applied in the classroom. This course aims to answer the question, How do secondary pupils within the "normal" range of abilities best acquire the skills and content that the schools impart? Measurement, evaluation, and classroom discipline are also considered.

† **416-304 MEASUREMENT AND EVALUATION IN EDUCATION.** 3 credits. The purposes of examinations. Causes of complaints about examinations. Equalizing means and dispersions in distribution of marks. Standardized scores. The percentile system. Essay and objective-type examinations. Taxonomies of educational objectives. Validity and reliability: item analysis.

† **416-305 NON-VERBAL COMMUNICATION.** 3 credits. An introductory course dealing with non-verbal aspects of behaviour and its interpretation. It will deal also with non-verbal communication in young children and children without speech. Some consideration will be given to the cognition of behaviour acts from drawings, cartoons, and illustrative gestures. (Enrolment is limited to 25 students in each semester; students should pre-register in September with the department.)

416-306 THE PSYCHOLOGICAL BASES OF VALUES AND MORAL EDUCATION. 3 credits. A study of how a child's sense of morality is achieved and the possible applications of theory and research to education. Cognitive developmental psychology is a primary focus, although other theories will also be explored. Pre-requisite: Knowledge of the theories of Jean Piaget and permission of the instructor.

•† **416-310 COMPUTER APPLICATIONS IN EDUCATION.** 3 credits. The course will be non-mathematical in nature and will deal with such topics as recent developments in computer-assisted instruction, computer-assisted testing, and computer-managed instruction. The results of recent research and their field applications will be considered.

416-311 A COMPUTER APPLICATION MODEL FOR EDUCATION. 3 credits. A non-mathematical course introducing students to the operation and potential of a mini-computer. Educational computer projects prepared by students will be discussed and analyzed with a view to understanding the role of a computer in the development of cognition. (limited enrolment).

• **416-314 DEVELOPMENTAL TESTING OF YOUNG CHILDREN.** 3 credits. (Prerequisite: 414-214). Guided observation of children with emphasis on developmental testing. Lectures, demonstrations and testing practicum.

416-315 DEVELOPMENT IN INFANCY. 3 credits. An examination of the development of children from birth to two years, with a view to understanding normal development and recognizing deviations from it. The effect of pre-natal influences and early post-natal experiences on later intellectual, personality and social development will be explored.

† **416-377 ADOLESCENCE AND THE PROCESS OF EDUCATION.** 3 credits. Development of personality and social behaviour in adolescence. Problems relating to self-concept, academic achievement, relationships with others, and development of values in a changing culture. Some attention to current criticisms of the school as an agency involved in adolescent development. *(This course includes an optional field experience component which will fulfill that requirement for U2 Secondary B.Ed. students, but is also available to others).*

† **416-394 COGNITIVE DEVELOPMENT IN THE SCHOOL-AGE CHILD AND ADOLESCENT.** 3 credits. The major orientation of the course will be around Piaget's theory of intellectual development and its relevance for the school, although

the work of others in the field will also be considered. (This course should be seen as a complement to either 414-208, The Development of Personality and Social Behaviour in the School-age Child, or 414-377, Adolescence and the Process of Education). *(Includes a field experience component).*

† **416-396 THE NATURE OF INTELLIGENCE.** 3 credits. The nature, development and measurement of intelligence in a school setting. Intelligence and learning; creativity and intelligence; intelligence and cultural deprivation. The role of the school in developing intelligence.

416-410 ADVANCED COMPUTER APPLICATIONS IN EDUCATION. 3 credits. The course will deal with such topics as advanced Computer Assisted Instruction tailored testing by computer, advanced computer managed instruction, and multi media Computer Assisted Instruction. (Pre-requisite 414-310)

•† **416-456 APPLICATION OF PSYCHOLOGICAL PRINCIPLES TO EDUCATIONAL PROBLEMS.** 3 credits. (Prerequisites: This course has a limited enrolment and permission of the instructor is required). Major problems in education and instruction and a review of the related psychological research findings. Students will investigate the literature and design and *conduct an experiment* related to one of the following areas: (1) Individual Student Differences; (2) Social Aspects of Education; (3) Programmed Learning; (4) Design and Evaluation of Learning Environments and (5) Classroom Management. *(Includes a field experience component).*

416-460 HUMAN DEVELOPMENT. 3 credits. A review of current theory and knowledge of human development through the life cycle. Particular attention is given to emotional and social development. All major age-stages are considered. Emphasis is placed on the effects of interaction between individuals of these different age groupings.

416-462 SMALL GROUP PROCESSES AND THE FAMILY. 3 credits. Pre-requisite: 412-402. A review of the family in historical and current perspectives which emphasize impact of family relationships on individual and small group behaviour. The Life Cycle of the Family, the Internal Processes of the Family, Roles and Stereotyping, will be investigated. Participation in group process will be required.

416-463 PERSONAL AWARENESS AND LEADERSHIP IN FAMILY LIFE EDUCATION. 3 credits. A review of the lifestyles and cultural traits in contemporary urban Québec society and their impact on "family life development". Those leadership intervention and confrontation skills which are useful for small groups will be emphasized.

416-464 FAMILY COMMUNICATION. 3 credits. Family communication processes and interpersonal reactions in the context of marriage and the contemporary family will be considered. Attention will be given to role changes and the effect of crises on marital and family relationships.

† **416-492 PSYCHOLOGY AND INSTRUCTIONAL DESIGN.** 3 credits. This course draws on the fields of learning theory, developmental psychology, and measurement to focus on the tasks of constructing instructional materials. Areas to be considered include behaviour analysis, concept formation, and test construction. *(Includes a field experience component).*

•† **416-495 SEMINAR IN SPECIAL TOPICS.** 3 credits. The content of the seminar will vary from year to year and will be announced prior to registration. The seminar may be given by a single instructor or by a group, as the occasion warrants. (Permission must be obtained from the department before registration).

† **416-496 INDIVIDUAL READING COURSE.** 3 credits. By arrangement with individual instructor. Permission must be obtained from the Department before registration

432 – EDUCATIONAL MEDIA

432-204 EDUCATIONAL MEDIA I. 3 credits. An introduction to media in teaching and training: rationale, and underlying principles, sources, selection; production, effective utilization and evaluation of media.

432-205 FILM PRODUCTION AND FILM CRITICISM. 3 credits. A study of the instructional uses of motion-pictures with an emphasis on Super 8mm film production and utilization. Limited enrolment.

432-209 MEDIA AND INSTRUCTIONAL DESIGN. 3 credits. The examination and application of the systematic planning techniques necessary in the design, development and validation of effective instructional materials.

432-220 – GRAPHIC DESIGN FOR INSTRUCTIONAL MATERIALS. (3 credits). An introduction to practical skills in graphic design for classroom instructional purposes, including learning basic skills in lettering, simple sketching, colouring techniques, for use in design layout of printed instructional materials, display and projected media.

† **432-303 PHOTOGRAPHY I.** 3 credits. An introduction to the history, utilization, research and principles of photography as related to education. Emphasis is on developing visual literacy and basic photographic techniques through lectures, seminars and production exercises. Limited enrolment.

432-304 EDUCATIONAL MEDIA II. 3 credits. (Prerequisite: 432-204). A continuation of the study of Educational Media in teaching and learning with an emphasis on more complex audio-visual productions. Limited enrolment.

- **432-305 ADVANCED FILM PRODUCTION.** 3 credits. (Pre-requisite: 432-205). A continuation of the study and application of cinematographic techniques in the production of educational and instructional Super 8 mm. films. Emphasis is on the elements of cinematography-continuity, visual rhythm within the shot, structural rhythm, imagery, point of view, and instructional effectiveness. Students may explore in depth such techniques as slow motion, time lapse, and animation.

432-306 EDUCATIONAL TELEVISION I. 3 credits. A survey of the development of educational television. Short productions using single camera and portable TV systems. Limited enrolment.

- **432-309 THE LIBRARY RESOURCE CENTRE.** 3 credits. A study of the development of the library-resource centre and its potential in the school curriculum. Techniques of effective teacher and student utilization of resource centres.

432-403 PHOTOGRAPHY II. 3 credits. (Prerequisite: 432-303). A continuation of the study and application of photography in education with an emphasis on the development of intermediate level photographic skills. Limited enrolment.

- **432-404 CONTEMPORARY DEVELOPMENTS IN EDUCATIONAL MEDIA.** 3 credits. A critical examinationof current trends in educational technology including educational television, simulation and gaming, computer-assisted instruction, systems analysis, programmed instruction, etc.

432-405 INDEPENDENT PROJECT. 6 credits. A major instructional media production undertaken by the student after consultation with the Director of the Educational Media Program.

- **432-406 MANAGEMENT OF EDUCATIONAL MEDIA SERVICES.** 3 credits. An examination of the development and management of media services, including the design of instructional facilities, the administration of materials, equipment and production services, budgeting, personnel management, and the promotion of effective media utilization.

432-409 SPECIAL TOPICS IN EDUCATIONAL MEDIA. 3 credits. Seminars and workshops which examine specific topics will be chosen to reflect current concerns in the field, to exploit the expertise of guest lecturers, or to meet the media needs of special interest groups, and will vary from year to year.

- **432-440 MEDIA CURRICULUM AND INSTRUCTION: ELEMENTARY.** 3 credits. A materials centered workshop approach to teaching elementary school children how to utilize and produce media materials as part of their curricular and extra-curricular activities.

- **432-470 MEDIA CURRICULUM AND INSTRUCTION: SECONDARY.** 3 credits. An examination of the content and methods of teaching media courses at the secondary school level; the means of developing visual literacy; a study of the effects of mass media ont he adolescent and the school program; a materials centred workshop on student media production techniques.

449 - PROFESSIONAL DEVELOPMENT FOR COLLEGE TEACHERS

449-581 APPROACHES TO COLLEGIAL LEARNING AND TEACHING. 3 credits. This course deals with approaches to the college sector – e.g., the computer approach. Content varies with the nature of the group under instruction and the state of instructional development in the colleges.

449-582 EDUCATIONAL THEORY AND INSTRUCTIONAL STRATEGIES. 3 credits. Instructional strategies appropriate to post-secondary teaching, their strengths and weaknesses, and their relevance to basic theory and research.

449-584 LABORATORY TEACHING. 3 credits. An analysis of laboratory-oriented teaching in the career sectors of the collegial level. Emphasis on provincial and local regulations, organization of the laboratory, student behaviour, and teaching and learning patterns.

449-587 MANAGING A LEARNING SYSTEM. 3 credits. An introduction to the theory and practical skills necessary for managing a learning system defined as: (1) teacher (2) learner (3) classroom (4) larger college community. The course has four distinct sections: (1) searching for better ways to manage the college classroom (2) systems thinking and the management of adult education (3) managing relationships in the classroom (4) effects of personal learning style on teaching style.

449-588 INSTRUCTIONAL DESIGN IN HIGHER EDUCATION. 3 credits. Exploration of theories, concepts, methods, and procedures underlying instructional development and design with particular attention to acquiring a understanding of selected instructional systems (e.g., audiotutorial instruction, modular instruction, individually prescribed instruction (Keller Plan), instructional television, computer-assisted instruction, etc.). Synthesis of acquired theories and instructional design components in the design of a learning system relevant to individual teaching situations.

449-589 TEACHING AND LEARNING: SYSTEMATIC INSTRUCTION IN HIGHER EDUCATION. 3 credits. Participants, working under guidance with modules especially designed for the use of col-

lege and university teachers, explore a theory of systematic instruction while meeting some particular curricular needs. The course is individualized to the point where single tutorials and small-group workshops may be arrange in selected aspects of the work of subject departments with a view to updating or extending basic subject knowledge or of participating in departmental approaches to learning and teaching in their special subjects.

449-591 STUDIES IN THE DISCIPLINE FOR MORE EFFECTIVE TEACHING II. 3 credits. For course description see 449-590 above.

449-592 PRACTICUM IN THE COLLEGE SETTING. 6 credits. (Prerequisites: 449-587, 449-588). Development of a major project relative to the discipline taught, and its implementation as far as is possible at the post-secondary level. The candidate works with one or more tutors throughout the process.

12 NON-DEPARTMENTAL COURSES

435 – STUDENT TEACHING

Note: ALL STUDENTS MUST REGISTER IN ADVANCE WITH THE STUDENT TEACHING OFFICE FOR ANY OF THE FIELD EXPERIENCE COURSES WHICH ARE LISTED BELOW. FAILURE TO REGISTER IN ADVANCE WITH THE STUDENT TEACHING OFFICE MAY JEOPARDIZE A STUDENT'S PLACEMENT IN A FIELD EXPERIENCE COURSE.

DIRECTED OBSERVATION Supervised field courses arranged by the Student Teaching Office and which provide an opportunity for the student to observe pupils in the school environment, the role and responsibilities of the teacher, the processes of teaching and learning, etc. Includes introductory conferences, seminars and some teaching experience.

435-215 **DIRECTED OBSERVATION – EARLY CHILDHOOD EDUCATION.** (6 credits.) Different learning environments for children from birth to age 8.

435-245 **DIRECTED OBSERVATION – LATER CHILDHOOD EDUCATION.** (6 credits.) The elementary school as a learning environment.

435-246 **DIRECTED OBSERVATION – ELEMENTARY PHYSICAL EDUCATION.** (3 credits.)

435-295 **DIRECTED OBSERVATION – ELEMENTARY AND SECONDARY SCHOOLS.** (3 credits.)

435-370 **DIRECTED OBSERVATION – ELEMENTARY SCHOOL.** (3 credits.)

435-375 **DIRECTED OBSERVATION – SECONDARY SCHOOL.** (3 credits.)

FIELD EXPERIENCE Supervised field courses arranged by the Student Teaching Office with the cooperation of regional schools. Under the guidance of an assisting teacher, students work in a classroom over an extended period of time, teaching at the level and in the subject areas appropriate to their individual programs. In conjunction with this practical experience the faculty provides conferences and seminars in related methodologies as well as individual counselling and postpracticum evaluation.

435-235 **FIELD EXPERIENCE – SECONDARY** (Vocational Education). (4 credits.)

435-344 **SEMINAR PRACTICUM.** (3 credits.) *(Prerequisite: Satisfactory completion of 435-245 and permission of instructor).* Designed for U2 elementary students involving participation in real or simulated classroom situations with a view to providing experience in teaching strategies. Students will be expected to student teach at the level of their option.

435-346 **FIELD EXPERIENCE – ELEMENTARY SCHOOL.** (9 credits.)

435-347 **FIELD EXPERIENCE – ELEMENTARY SCHOOL.** (6 credits.)

435-374 **FIELD EXPERIENCE – SECONDARY SCHOOL** (1 subject). (3 credits.)

435-376 **FIELD EXPERIENCE – SECONDARY SCHOOL** (1 subject). (9 credits.)

435-377 **FIELD EXPERIENCE – SECONDARY SCHOOL** (2 subjects.) (9 credits.)

435-394 **FIELD EXPERIENCE – ELEMENTARY & SECONDARY SCHOOLS.** (3 credits.)

435-395 **FIELD EXPERIENCE ELEMENTARY & SECONDARY SCHOOLS.** (6 credits.)

435-421 **FIELD EXPERIENCE – EARLY CHILDHOOD LEVEL.** (9 credits) (Co-requisite 433-421) Learning environments at the pre-school and cycle one levels, for children to the age of 8.

435-422 **FIELD EXPERIENCE – EDUCATION IN THE NORTH.** (6 credits.)

435-431 **FIELD EXPERIENCE – LATER CHILDHOOD LEVEL.** (9 credits) (Co-requisite 433-431) Learning environments at the elementary school level, for children ages 6 to 11.

435-444 **FIELD EXPERIENCE – ELEMENTARY SCHOOL.** (3 credits.)

435-478 **FIELD EXPERIENCE – SECONDARY** (1 subject) (6 credits.)

435-496 **FIELD EXPERIENCE – ELEMENTARY AND SECONDARY SCHOOLS.** (9 credits.)

448 – CORE PROGRAMS

448-301 ORIENTATION TO SECONDARY SCHOOL TEACHING. (0 credits.)

448-305 TEACHING AND LEARNING. 6 credits. Interdisciplinary approaches to teaching and learn-

ing, education and schooling, with emphasis on educational policies and practices in contemporary Québec. The course includes a compulsory unit in Québec School Law and offers, as an option, a unit on the philosophy of Catholic education.
N.B. This course is offered jointly by the Departments of Social Foundations and Educational Psychology and Sociology in cooperation with Catholic Studies and Educational Administration.

448-497 INDIVIDUAL RESEARCH PROJECT. (3 credits).

448-498 INDIVIDUAL RESEARCH PROJECT. (6 credits).
(Prerequisites: open only to U3 level students and students who have completed most of the requirements of a certificate or diploma program, and with permission of the program advisor or director.)
An independent research project dealing with a defined theoretical, experimental, or applied topic in the study of education, carried out under the supervision of a faculty member, and leading to a formal report. The report would normally be evaluated by an appropriate committee of faculty members appointed by the faculty supervisor.

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CALENDAR FOR SESSION 1982-83

	1982
September 2, Thursday and September 3, Friday	Pre-registration counselling
September 7, Tuesday	Registration
September 6, Monday	Labour Day. Administration offices will be closed.
September 8, Wednesday	Fall term lectures begin
September 16, Thursday	Late registration
September 27, Monday	Last day for fall term course changes
October 11, Monday	Thanksgiving Day. Lectures cancelled. Administrative offices will be closed.
To be announced	Fall Convocation
November 15, Monday	Last day for withdrawal for A courses
December 10, Friday	Last day of fall term lectures
December 10, Friday to December 23, Thursday (inclusive)	Examination period
	1983
January 5, Wednesday	Winter term lectures begin
January 6, Thursday	Winter term registration for new students
January 26, Wednesday	Last day for winter term course changes
February 4, Friday	Mid-term holiday (Winter Carnival) (Montreal Campus). Lectures cancelled.
February 24, Thursday and February 25, Friday	Study break. Lectures cancelled.
March 16, Wednesday	Last day for withdrawal from B courses
April 1, Friday to April 4, Monday	Easter. Administration offices will be closed from 5 p.m. Thursday, March 31 until 9 a.m. Tuesday, April 5.
April 8, Friday	Last day of winter term lectures
April 14, Thursday to April 29, Friday	Examination period
May 23, Monday	Victoria Day. Administrative offices will be closed.
To be announced	Convocation

1982 – 83 FACULTY OF ENGINEERING

including Schools of Architecture, Computer Science and Urban Planning

McGill University
Montreal

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McGill Campus
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Montreal, PQ, Canada H3A 2K6

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The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees, schedules and the revision or cancellation of particular courses.

Legal Deposit I 81

1 ADMINISTRATIVE OFFICERS AND FACULTY COMMITTEES

1.1 ADMINISTRATIVE OFFICERS

DAVID L. JOHNSTON, A.B.(Harv.), LL.B.(Cantab. and Queen's), LL.D.(L.S.U.C.)
Principal and Vice-Chancellor

S.O. FREEDMAN, B.Sc., M.D., C.M.(McG.), F.R.C.P.(C), F.A.C.P., F.R.S.C.
Vice-Principal (Academic)

JOHN ARMOUR, AACCA **Vice-Principal (Administration and Finance)**

E.J. STANSBURY, M.A., Ph.D.(Tor.)
Vice-Principal (Planning and Academic Services)

GORDON MACLACHLAN, B.Sc., M.A.(Sask.), Ph.D.(Man.) **Vice-Principal (Research)**

L.E. LLOYD, B.Sc.(Agr.), M.Sc., Ph.D.(McG.)
Vice-Principal (Macdonald Campus)

COLIN M. McDOUGALL, D.S.O., B.A.(McG.)
Secretary-General

JEAN-PAUL SCHULLER, B.A.(Ott.) **Registrar**

MICHAEL HERSCHORN, M.A., Ph.D.(McG.)
Dean of Students

PEGGY SHEPPARD, B.Ed.(McG.), B.A.(Sir G. Wms.) **Admissions Office, Director**

ALTA ABRAMOWITZ, B.A., M.Ed(McG.)
Information & Liaison Office, Director

MARIANNE SCOTT, B.A., B.L.S.(McG.)
University Libraries, Director

1.1 FACULTY ADMINISTRATIVE OFFICERS

GERALD W. FARNELL, B.A.Sc.(Tor.), S.M.(M.I.T.), Ph.D.(McG.), Eng., F.I.E.E.E. **Dean**

WILLIAM BRUCE, B.A.Sc., M.A.Sc.(Tor.), Eng., M.E.I.C., M.A.S.M.E.
Associate Dean, Student Affairs

ERIC L. ADLER, B.Sc., M.A.Sc.(Tor.), Ph.D.(McG.), Eng. **Associate Dean, Academic**

TOMAS J.F. PAVLASEK, B.Eng., M.Eng., Ph.D.(McG.), Eng., F.E.I.C., M.C.S.E.E., S.M.I.E.E.E. **Associate Dean, Planning and Development**

DEREK DRUMMOND, B.Arch.(McG.), M.R.A.I.C.
Director, School of Architecture

MONROE M. NEWBORN, B.E.E. (Renss.), Ph.D.(Ohio State)
Director, School of Computer Science

DAVID FARLEY, B.Arch.(McG.), M.C.P., M.Arch.(Harv.)
Director, School of Urban Planning

W.J. MURRAY DOUGLAS, B.Sc.(Qu.), M.S.E., Ph.D.(Mich.), M.C.S.Ch.E., F.C.I.C.
Chairman, Department of Chemical Engineering

PHILIP J. HARRIS, B.Sc.(Man.), M.Eng., Ph.D.(McG.), Eng., M.C.S.C.E., M.A.S.C.E.
Chairman, Department of Civil Engineering and Applied Machanics

PIERRE BELANGER, S.M., Ph.D.(M.I.T.), Eng.
Chairman, Department of Electrical Engineering

MICHAEL P. PAIDOUSSIS, B.Eng.(McG.), Ph.D. (Cantab.), Eng., F.I.Mech.E., M.C.S.M.E., M.A.S.M.E., M.A.A.M., M.I.A.H.R.
Chairman, Department of Mechanical Engineering

JOHN E. GRUZLESKI, B.Sc., M.Sc.(Qu.), Ph.D.(Tor.), Eng. **Chairman, Department of Mining and Metallurgical Engineering**

JOHN E. UDD, B.Eng., M.Eng., Ph.D.(McG.), Eng.
Secretary of Faculty

IDA GODEFROY **Administrative Assistant to the Faculty**

1.2.1 Emeritus Professors

LOUIS JOSEPH ARCAND, B.Sc., M.Eng(McG.), Eng., Q.L.S., M.C.I.S., M.A.S.P.
Emeritus Professor of Civil Engineering

DAVID R. AXELRAD, Dipl.-Ing.(Vienna), M.Eng. Sc.(Syd.), Dr.Techn.(Vienna), M.N.A.Sc., Eng.
Emeritus Professor of Mechanical Engineering

JOHN BLAND, B.Arch.(McG.), A.A. Dipl., D.Sc.(Carleton), R.C.A., F.R.A.I.C., O.A.Q.
Emeritus Professor, School of Architecture

FREDERICK STANLEY HOWES, B.Sc., M.Sc.(McG.), Ph.D.(Lond.), D.I.C., Eng., F.I.R.E.
Emeritus Professor of Electrical Engineering

JOSEPH L. deSTEIN, B.Sc.(Sask.), M.Eng.(McG.), Eng., M.E.I.C.
Emeritus Professor of Civil Engineering

ROBERT G.K. MORRISON, B.A.Sc.(Tor.), Eng., M.I.M.M., M.A.I.M.E.
Emeritus Professor of Mining Engineering

STUART WILSON, B.Arch.(McG.), R.I.B.A., O.A.Q.
Emeritus Professor, School of Architecture

1.3 STANDING COMMITTEES OF THE FACULTY

ACADEMIC COMMITTEE

Associate Dean (Academic) (Chairman), Professors, J.M. Charrier, T.J. Merrett, B.T. Ooi, J.C. Osler, J.W. Provan, P. White, R. Zuk, Mrs. J. Wygnanski, Messrs. D. Laks, D. Mackenzie, T. Yudelson.

COMMITTEE ON ADMISSION TO UNDERGRADUATE PROGRAMS

Associate Dean (Student Affairs) (Chairman), Professors D. Covo, W.J.M. Douglas, D. Drummond, F. Galiana, A. Misra, J.C. Osler, G.W. Smith.

COMMITTEE ON ADVANCED STUDIES

Associate Dean (Academic) (Chairman), Professors A.M. Ahmed, V. Bhatt, D.J. Crossley, J.M. Dealy, B.T. Ooi, C.C. Paige, S.B. Savage, J.M. Wolfe. Two graduate students, to be named.

AGRICULTURAL ENGINEERING COMMITTEE

Professor E. McKyes (Chairman), Professors R.S. Broughton, P.H. Schuepp, from the Faculty of Agriculture. Professors C.L. Murphy, R. Neufeld, L. Spraggs from the Faculty of Engineering.

COMMITTEE ON COLLEGE AND SCHOOLS LIAISON

Professor C.H. Champness,(Chairman), Professors D.J. Burrage, J.C. Cherna, D. Covo, D.A. Selby, J. Udd, M.E. Weber, The Associate Dean (Student Affairs) and the Director of Information and Liaison Office, ex-officio. Messrs. S. Kucer and J. Telgarsky.

HONORARY DEGREES COMMITTEE

The Dean (Chairman), Professors B. Anderson, P.R. Bélanger, W.J.M. Douglas, B. Newman. One graduate student, to be named.

LIBRARY COMMITTEE

Professor F. Galiana (Chairman), Professors R. Cox, O.M. Fuller, N. Horspool, O. Jensen, L. Kops, J.M. Wolfe, and Engineering Librarian. Mr. G. McCartney and Ms. H. Kim. One graduate student, to be named.

NOMINATING COMMITTEE

The Dean (Chairman), Professors A.M. Ahmed, D. Covo, D. Farley, N. Friedman, R.D. Japp, N. Rumin, M.E. Weber, W. Williams.

COMMITTEE ON PHYSICAL PLANNING

Associate Dean (Planning and Development) (Chairman), Directors, Schools of Architecture, Computer Science and Urban Planning. Chairmen, Engineering Departments, or their delegates, Mr. M. Rivest and Ms. A-M. Fleming. The Associate Dean (Academic), ex-officio.

SCHOLARSHIPS COMMITTEE

Professor R. Hoffman (Chairman), Professors W. Bruce, S. Mirza, S. Zucker.

COMMITTEE ON STANDING

Associate Dean (Student Affairs) (Chairman), Director, School of Architecture, Chairmen, Engineering Departments, Senior Records Officer.

OUTSTANDING TEACHER AWARD COMMITTEE

The Dean (Chairman), Professors J.M. Dealy, B.G. Newman, R.D. Japp (alternate).

2 THE FACULTY

2.1 HISTORICAL NOTE

The Faculty of Engineering celebrated its centenary during the 1971-72 session. It began operations as the Department of Practical and Applied Science in the Faculty of Arts offering degree programs in Civil Engineering and Surveying, Mining Engineering and Assaying, and Practical Chemistry. Diploma courses had been offered from 1859 and by 1871, the staff and enrolments had increased sufficiently to justify the creation of the Department. Continued growth led to the formation of the Faculty of Applied Science in 1878 and by 1910 there were ten degree programs offered, including Architecture and Railroad Engineering. Subsequent changes in the overall pattern of the University led to the creation in 1931 of the Faculty of Engineering with a departmental structure very similar in name to that which exists at the present time.

2.2 THE FACULTY TODAY

The current structure of the Faculty includes five engineering departments and three schools:

The Departments

Chemical Engineering
Civil Engineering and Applied Mechanics
Electrical Engineering
Mechanical Engineering
Mining and Metallurgical Engineering

The Schools
Architecture
Computer Science
Urban Planning

The Faculty serves approximately 1800 undergraduate students and 400 graduate students with a wide variety of academic programs.

Undergraduate programs leading to professional bachelor degrees are offered in all segments except the School of Computer Science and the School of Urban Planning. These programs are designed to qualify the graduates for immediate employment in a wide range of industries and for membership in the appropriate professional bodies. Additionally, a non-professional degree is offered in the School of Architecture for those who plan to work in related fields not requiring professional qualification. The curricula are also structured to provide suitable preparation for those who plan to continue their education in post-graduate studies either at McGill or elsewhere.

The academic programs, which are described in detail in Section 5, are divided into a core and an elective section. The core programs emphasize those unchanging basic principles which permit our graduates to keep abreast of progress in technology throughout their careers. Exposure to current technology is provided by the wide variety of technical elective courses which allow our students to pursue in depth a particular field of interest. General electives provide the opportunity for study in non-technical fields. The Faculty recognizes the managerial functions of a large proportion of engineers and maintains a close liaison with the Faculty of Management. A Minor in Management has been established as described in Section 6.

Post-graduate programs leading to master's and doctoral degrees are offered in all sectors of the Faculty. Numerous areas of specialization are available in each of the departments and schools. All post-graduate programs are described in the Announcement of the Faculty of Graduate Studies and Research. The professional degree program in Urban Planning at the graduate level is described in Section E.

The School of Computer Science concerns itself with a broad range of activities associated with the design, operation and application of computer facilities. Undergraduate programs in Computer Science are offered in the Faculty of Science and are described in the Faculty of Science Announcement. A variety of courses appropriate to these areas is available to engineering undergraduates. Specialized degree programs are offered at the post-graduate level following undergraduate studies in engineering, mathematics or certain branches of science. Guidance in the choice of Computer Science electives and a description of a Minor in Computer Science are given in Section 6. A description of a Minor in Physics is given in Section 6.5.

2.3 SPECIAL FACILITIES AND RELATED PROGRAMS

2.3.1 McGill Computing Centre

The Computing Centre provides information processing services for instructional, research and administrative purposes. The main facility is based on an Amdahl V7 central processing unit located in Burnside Hall. Satellite facilities for both batch processing and interactive computing are located at several locations on campus and at Macdonald College.

All engineering undergraduate students receive an introductory course in computing in the early stages of their studies and subsequently use the computer for the solution of engineering problems in other courses. Post-graduate students and staff use the facility extensively for research purposes.

2.3.2 Brace Research Institute

The Brace Research Institute of the Faculty of Engineering was founded in 1959 by the generosity of Major Brace to investigate ways of helping people in arid zone areas. The Institute has concentrated on problems affecting individuals and small communities. The Institute functions in two parts: research operations and field operations.

The research activity is aimed at developing technology which will utilize local resources of material and energy to improve living conditions in arid areas. The present areas of research are concerned principally with solar energy, wind energy and energy from biomass. Some examples of research activities are: evaluation of a solar-powered closed cycle engine for pumping water and generating electricity; investigations with the transformation and storage of solar energy as heat; and design of windmill and windmill-to-pump transmission systems. A study of biogas generation and storage has been initiated in collaboration with Macdonald College.

The Field Operation, with headquarters at the Macdonald campus, exists to advise governments and communities on how to best use the newly developed expertise of the Institute. This expertise currently relates mainly to water desalination plants, solar heaters, cookers and crop dryers, solar heating systems adapted for residential and commercial buildings, solaria; wind energy; storage of heat in solar ponds; and the design of greenhouses to conserve water and energy.

2.3.3 Institute of Occupational Health and Safety

This Institute which was established at Mont St. Hilaire by the Department of Mining and Metallurgical Engineering has excellent facilities for the study of noise, vibration, heat, cold, dusts, illumination and other physico-chemical agents encountered in the working environment. The program of research

covers a wide range of activities and much of the work at the Institute is of an interdisciplinary nature.

2.3.4 Agricultural Engineering

The Faculty of Engineering cooperates with the Faculty of Agriculture in providing courses of instruction for a curriculum in Agricultural Engineering to *meet requirements for a professional degree awarded in the Faculty of Agriculture.* The second semester of the penultimate year of the program is given by the Faculty of Engineering on the Montreal campus. Details of the curriculum are given in the *Announcement of the Faculty of Agriculture.*

Some of the courses offered by the Department of Agricultural Engineering may be of interest to students in the Faculty of Engineering, and a partial listing is given below:

336-215B Principles of Hydrology
336-322A Food Production and Processing Waste Management
336-411A Off-Road Power Machinery
336-413A Materials Handling Systems
336-416A Engineering for Land Development
336-511A Agricultural and Earthmoving Power Machinery

2.3.5 Biomedical Engineering Unit

Post-graduate training in Biomedical Engineering is supervised in two ways: (i) by the Biomedical Engineering Unit and (ii) by individual faculty members working in collaboration with their colleagues in the Faculty of Medicine.

The Biomedical Engineering Unit is in the Faculty of Medicine. Graduate students are registered through appropriate departments in the Faculty of Engineering and elsewhere. Research interests of the Unit fall into two main categories: experimental and theoretical studies of biological systems and computer applications in medicine and medical research. A computer network, linking laboratory computers in the Medical Faculty, is under development.

Individual staff projects with the Faculty of Engineering include such topics as ECG analysis, health care system modelling, pattern recognition applied to medical problems, and studies of biomechanics and biomaterials aspects of normal and prosthetic human joints.

Engineering undergraduates or graduates from any specialty who are motivated towards the biomedical applications of engineering should contact the Chairman of their department or the Director of the Biomedical Engineering Unit.

2.4 LIBRARY FACILITIES

The University has numerous libraries serving a wide variety of needs. Those specifically serving Engineering, Architecture and Urban Planning are the Engineering Library, the Physical Sciences Library, and the Blackader Library of Architecture.

During the year 1981/82, the Engineering and Physical Sciences Libraries will be at a new location, the Macdonald Physics Building.

ENGINEERING LIBRARY

The Engineering Library is located on the Main Floor of the Macdonald Engineering Building. The library contains over 51,000 volumes of books, bound serials and theses and subscribes to close to 1,400 serial titles. In addition to books and serials, the collection includes more than 40,000 items in other formats including government publications, microtexts, standards and technical reports. At the present time, the collection grows by about 5,000 items annually.

The library supports the research and teaching activities of the Civil Engineering, Electrical Engineering and Mechanical Engineering Departments, and the school of Computer Science. The library is also responsible for collecting material in Aeronautics, Applied Mathematics, Engineering Management, Soil Mechanics, Transportation and Water Pollution and is a depository for selected NASA and AGARD publications.

Library hours are posted outside the door of the Library. Services available include circulation of materials, interlibrary loans to supplement the collection, photocopying facilities and microfilm/microfiche reader-printers.

The Reference Librarian is available to answer reference queries, to give instruction in the use of the card catalogue, reference books and indexes, and to provide orientation lectures and tours. Since 1976, the Library has provided access to on-line information sources in science and technology offered by the Canada Institute for Scientific and Technical Information, and Lockheed Information Services.

PHYSICAL SCIENCES LIBRARY

Material on Chemical, Mining and Metallurgical Engineering is available at the Physical Sciences Library which also serves the Departments of Chemistry, Geological Sciences, and Physics and is located in the Frank Dawson Adams Building.

BLACKADER LIBRARY OF ARCHITECTURE

The Blackader Library of Architecture, located on the third floor of the Redpath Library, houses approximately 48,500 volumes. The subjects of this collection cover landscape architecture, urban planning and urban design, history of architecture, architectural planning, building construction, housing, fine arts, and applied arts. The library subscribes to 254 periodicals in various languages. The Blackader Library has its own Rare Books Department with valuable first editions in the fields of architecture and the fine arts. On the fourth floor of

the building is a unique collection of original drawings and photographs of old Canadian architecture.

More details on library services are given in the Engineering Library Handbook available at the Engineering Library circulation desk.

3 GENERAL INFORMATION

3.1 ADMISSION REQUIREMENTS

Admission to the Faculty's undergraduate programs occurs twice a year, at the start of the Fall semester and the start of the Winter semester with the exception of the School of Architecture where all places in the first year of the program are filled at the September registration. It is based on one of the following qualifications:

The Diploma of Collegial Studies (DCS or DEC) in the Pure and Applied Sciences program at a CEGEP in the Province of Québec.
Collegial students should refer to the "Structures d'Accueil aux Etudes Universitaires de Premier Cycle" to ensure that they are registered in an appropriate pre-university program.

or

Appropriate academic qualifications achieved elsewhere.

Canadian applicants from provinces other than Québec who have completed Grade 12, Grade 13 Ontario or first year university in Newfoundland and who have a strong foundation in mathematics (including a course in trigonometry or functions), physics and chemistry may be granted admission to an extended credit Bachelor of Engineering program.

Students from other countries are advised to consult the *General Announcement* or the Admissions Office for specific information on entrance requirements.

Enrolment in the School of Architecture is limited and the selection of applicants is based on academic standing. Applicants who are not accepted for Architecture and are qualified for Engineering will be offered admission to a Department of Engineering, if a second choice is indicated on the application form.

Students who have taken courses at another university may apply for admission with advanced standing. A maximum of 40 credits may be allowed towards the B.Eng. degree, 40 credits towards the B.Sc.(Arch.), and 65 credits towards the B.Arch. degree.

Mature Student Admission

Residents of Canada who will be 23 years of age or older by September 1 (for admission to the Fall Session) or January 1 (for admission to the Winter Session) and who lack the academic background normally required for admission may apply for entrance as mature students.

Individuals interested in being considered for entrance under this policy should contact the Admissions Office for further information.

3.2 APPLICATION

Application should be made to the Director, Admissions Office, F. Cyril James Building, McGill University, 845 Sherbrooke Street, West, Montreal, PQ, H3A 2T5

Applications for admission to the Fall semester should be received before March 1. Applications for admission to the Winter semester must be received before September 1, if a non-Québec resident, and November 1, if a Québec resident.

Students wishing to transfer from another McGill Faculty to the Faculty of Engineering must apply to the Office of the Associate Dean, Student Affairs, Room 382, Macdonald Engineering Building. Deadline for such applications is 3 weeks prior to the commencement of classes.

3.3 REGISTRATION

Registration and late registration dates will be announced; see the Calendar of Dates for the 1982-1983 session.

An additional fee of $50 is required for late registration. Applications for remission of this fee will be considered only in cases of illness or other family emergency. Students who are unable to register on the official date and must register late are required to report in person to the Student Affairs Office of the Faculty immediately after they commence attending classes.

All students intending to register for elective courses in other Faculties should consult the particular department prior to registration to ensure a place when enrolment is limited, or to be assigned to an appropriate section when necessary.

Students taking courses in the Centre for Continuing Education for credit must report to the Centre, presenting a completed form which is available at the Faculty Student Affairs Office or at the Centre.

Some of the courses listed in this Announcement may not be appropriate for students outside the Faculty of Engineering. Non-Engineering students should obtain permission to register for courses listed in this Announcement from the Associate Dean of their Faculty.

Course Changes

Students may change a course for which they have registered provided this is done before the end of the third week of the semester.

Course Withdrawal

Students may withdraw from a course without academic penalty provided they accomplish this before the end of the seventh week of the semester.

Beyond this time their names will appear on the examination lists and, in the event of students not taking the examination, they will be given a J grade (see Section 4.3). **Tuition fees are refundable under conditions outlined in the *General Announcement* available at the Registrar's Office.**

Course Verification

Accurate data are essential to the operation of the Student Record System since the preparation of examination lists and computation of academic standing are done automatically from these records. In the last resort, only the individual student knows if the course record is correct. Accordingly, there is a Course Verification Period each semester (usually the sixth and seventh weeks of the semester) during which all students must visit the Faculty Student Affairs Office to verify their records.

3.4 COUNSELLING

All new students are required to seek academic counselling about their programs from the Department in which they plan to study prior to the registration date. Additional information may be obtained by calling:

General	392-5860
	392-5878
	392-5880
Architecture	392-5409
Chemical Engineering	392-5432
Civil Engineering	392-5970
Computer Science	392-8275
Electrical Engineering	392-5415
Mechanical Engineering	392-5473
Metallurgical Engineering	392-5706
Mining Engineering	392-5430
Student Aid	392-5258
Urban Planning	392-4353

In addition to departmental counselling the Faculty provides a free tutorial service, known as the ACE tutorial service, to help students in their first year of studies. Upper year engineering students and graduate students are available daily from 12 noon to 3 p.m. in the Engineering Building to help with any academic difficulties.

3.5 FEES

Fees are computed at the rate of $19.00 per credit plus the appropriate Student Services and Students' Societies fees. Students should either consult the *General Announcement* or enquire at the Registrar's Office for further information, details of special fees and penalties, graduation fee and regulations concerning withdrawal. Fee schedules for graduate students are outlined in the calendar of the Faculty of Graduate Studies and Research.

New foreign students are required by the Québec government to pay 60% of the estimated cost of their studies. In 1981-82 this was $4,128 per year or $137.60 per credit. The rate for 1982-83 will be announced as soon as it is determined by the government. Returning foreign students will pay $3,500 per year or $116.70 per credit and an additional $1,000 per year in each subsequent year until they reach the rate paid by newly admitted foreign students.

3.6 STUDENT ACTIVITIES

The campus offers a wide variety of extra-curricular activities for students. All are urged to participate in those of their choice and within the limits of their interests and abilities. Many of these are organized within the Faculty under the auspices of the Engineering Undergraduate Society, or the Architectural Undergraduate Society. Both of these organizations publish handbooks describing their operations and the activities of various clubs and societies within the Faculty. All undergraduate students automatically become members of the EUS or the AUS, as appropriate.

Student Services and Residential Facilities

A variety of student services and residence accommodation, co-educational and for women, are available. For details see the *General Announcement.*

3.7 ACADEMIC CREDIT TRANSFER AGREEMENT

Regular full-time undergraduate students and regular graduate students registered at McGill may, with the written permission of the Dean of the Faculty, register for up to 6 credits in each academic year at any Québec University. These courses, weighted, graded, and successfully completed according to the standards of the university giving the courses, will be fully recognized by McGill for the purpose of the degree for which the student is registered. This privilege will not be granted automatically; the course should form a required part of the student's program and be unavailable at McGill. Students wishing to take advantage of this agreement should consult the Associate Dean (Student Affairs) for details, and are informed that this agreement is subject to the following conditions:

(i) that courses in the core program must be taken at McGill;

(ii) that the other universities concerned may, at their discretion, refuse the registration of a student for any of its courses;

(iii) that the obligation of the student to follow the curriculum laid down by McGill is not affected;

(iv) that the student is responsible for ensuring that the McGill timetable permits these courses to be taken without conflict;

(v) that the universities concerned are not responsible for special arrangements in cases of examination timetable conflicts.

Students may take advantage of this agreement by completing the TRANSFER CREDIT form available from the Registrar's Office. This form permits the student to collect the required academic authorizations and that of the Director of Finance; ensures automatic fee transferral from the home university to the host university; and ensures the automatic reporting of marks and credits to the home university.

NOTE: Transfer credits are not calculated in the GPA or CGPA and the grades are not entered on the student's McGill transcript.

3.8 TRANSFER FROM OTHER FACULTIES OR PROGRAMS

Please see Section 3.2.

3.9 SUMMER SESSION

The University operates a Summer Session on an extremely flexible basis to meet the special needs of students. Numerous Arts, Science and Management courses are available and are described in the Summer Session Announcement. The demand for Engineering courses is small so that few are given. These may be arranged to meet special needs and may be too late for insertion in the Summer Session Announcement. Students should, therefore, consult the Departments regarding possible courses. Students may not be enrolled in more than 6 credits concurrently without special permission of the Associate Dean.

4 ACADEMIC REQUIREMENTS

4.1 DEGREE REQUIREMENTS

In order to obtain a Bachelor's degree students must complete one of the departmental programs described in section 5.

4.2 DEGREES AND REQUIREMENTS FOR PROFESSIONAL REGISTRATION

Professional

Bachelor of Architecture
Bachelor of Engineering
Bachelor of Engineering (Honours)

Non-Professional

Bachelor of Science (Architecture)

The B.Eng. programs are fully recognized by the Accreditation Board of the Canadian Council of Professional Engineers and fulfill the academic requirements for admission to the provincial professional organizations. The B.Arch. program is recognized in all provinces as fulfilling the educational requirements for entry to the architectural profession.

Language Requirement for Professions

Québec law now requires that candidates seeking admission to provincially-recognized Québec professional corporations such as the Order of Engineers or the Order of Architects must possess a working knowledge of the French language, i.e. be able to communicate verbally and in writing in that language.

To demonstrate this capability, candidates will be required to pass an examination set by the Office de la langue française, unless they can show that three years of instruction in a French post-primary school have been completed. The professional corporation will require this proof of attendance or of successful completion of the Office examination.

This examination shall test the candidate's mastery of oral and written comprehension and expression in French. The contents may vary in accordance with the current terminological requirements of the profession or professional group.

Examinations take place every three months and may be attempted an unlimited number of times.

The examination may be attempted by registered students during the two years prior to the date they can seek admission to a professional corporation. Arrangements for sitting the exam while still a student must be made through the faculty office.

More information may be obtained from the Office de la langue française, Tour de la Bourse (Place Victoria), 15e étage, Montréal, PQ, H4Z 1G8, Telephone 873-8361.

Students who need to acquire a functional level of proficiency in French may register in courses at either the English and French Language Centre, 3438 McTavish Street, Telephone 392-5727, for courses during the day, or at the Centre for Continuing Education, 772 Sherbrooke Street West, Telephone 392-4901, for courses in the evening.

Students already proficient in French but who wish to keep up practice may register in courses at the Department of French Language and Literature, 3460 McTavish Street, Telephone 392-4577, or at the Centre d'études canadiennes-françaises, 3475 Peel Street, Telephone 392-5200.

4.3 STUDENT PROGRESS

The session is divided into two semesters with examinations and evaluation of student progress at the end of each. The course promotion system is employed. Students are allocated a letter grade for each course taken. Their grade point average is computed as described below from a combination of the grade and the credit assigned to a course.

The basic requirement for the B.Eng. degree is completion, with a cumulative grade point average of 2.00 or better, of a department program while registered as a degree candidate. The normal workload is 15 to 18 credits per semester.

A minimum of six semesters is required for completion of any program.

The non-professional B.Sc.(Arch.) degree is similarly structured with similar requirements. The professional B.Arch. degree requires a minimum of two additional semesters to complete the program.

A student must successfully complete the B.Eng. or B.Sc.(Arch.) programs within five years of entry. Candidates admitted to a lengthened program, or to a shortened program because of advanced standing, will have a correspondingly greater or lesser period in which to complete. Candidates entering the B.Arch. program must complete the degree requirements within two years. Extensions may be granted by the Committee on Standings in cases of serious medical problems or where other similarly uncontrollable factors have affected a student's progress.

Letter Grades

Grades A, A−, B+, B, B−, C+, C are permanent grades, clearly indicating satisfactory results. Grade D is a permanent grade indicating marginal results which may be acceptable for peripheral courses but not for core courses required by the program. The classification of a course as core or peripheral depends on the individual student' s program and will be decided by the department. Grade F is a permanent grade indicating unsatisfactory results. Category J indicates an unexcused absence from an examination. It is equivalent to an F grade.

In addition, a student may be assigned categories K, KF and L. Category K indicates a 3 month delay was granted for the completion of course work. If at the end of this period the course work is still not complete, the K grade will be changed to KF. Category KF indicates a failure and is calculated as a zero in the grade point average. The L category indicates a deferred grade because of medical or other valid reason. Although the K or L grades do not influence the grade point average, they remain as part of the student's record though they do not appear on transcripts.

Other categories which may appear on the student's record are Q(course continued in following term), W(permitted to withdraw without penalty). These have no influence on the student's grade point average.

Course Credit

The credit assigned to a particular course reflects the amount of effort it demands of the student. One credit normally represents three hours total work per week. This is in general a combination of lecture hours, other contact hours such as laboratory periods, tutorials and problem periods and personal study. As a guide the average division of time for a course is indicated in hours in the course listing after the course credit. For example 3(3-1-5) indicates a credit of three units consisting of three lecture hours per week, one tutorial hour per week and five hours of personal study per week.

Grade Point Averages

Letter grades are assigned grade points according to the scheme.

Letter Grade	Grade Point
A	4.0
A−	3.7
B+	3.3
B	3.0
B−	2.7
C+	2.3
C	2.0
D	1.0
F (Fail)	0

Categories K and L are excluded from the calculation of the grade point average which is defined by the ratio:

$$\frac{\Sigma(\text{course credit x grade points})}{\Sigma(\text{course credits})}$$

Summation over all courses taken in one semester gives the semestrial grade point average (SGPA) while summation over all courses taken since entry into the program gives the cumulative grade point average (CGPA). All results are included when courses are taken more than once. Any courses taken which lie outside the program are classified as extra and do not affect the grade point average. Where the available marks justify it, a letter grade best representing the achievement of the group will be displayed on students' transcripts next to their own grade.

Standings

A student's standing is based on the CGPA according to the following criteria.

Satisfactory standing:
2.00 or better

Probationary standing:
1.20- 1.99 first semester
1.50- 1.99 subsequent semesters

Unsatisfactory standing:
less than 1.20 first semester
less than 1.50 subsequent semesters

Candidates in satisfactory standing may proceed with the following conditions:

(i) All core courses in which D or F grades were obtained must either be repeated successfully (grade C or better) or be replaced by an alternative approved course which is completed successfully.

(ii) All other courses in which F grades were obtained must either be repeated successfully (grade D or better) at some point before graduation or be replaced by some alternative approved course which is completed successfully before graduation.

Candidates in probationary standing may proceed for one semester under the same conditions noted above but, in addition, must reduce their load to a maximum of 13 credits per semester and must achieve at the end of the semester either a CGPA of 2.00 or better or an SGPA of 2.50 or better. A student whose SGPA is 2.50 or better but whose CGPA is less than 2.00 may continue in probationary standing. Failure to achieve either of these grade point averages after the probationary semester will result in unsatisfactory standing.

Candidates with unsatisfactory standing must withdraw for at least one semester, after which they may be considered for readmission by the Committee on Standings.

Language of Instruction

The language of instruction is English, but students may write examinations, reports and essays in French.

Repeated Courses

Students who fail to achieve the required results in a course must successfully repeat either it or a substitute course approved by their departments. For students who fail prerequisite courses which are offered in only one semester, the departments responsible may, in appropriate cases, arrange "reading courses" during the other semester or during the summer months. Such courses taken during a regular semester constitute a normal part of the candidate's work load which must be reduced correspondingly in the rest of its content.

Electronic calculators

Electronic calculators are normally permitted in examinations. Pre-prepared programs may be permitted in certain examinations in which event it is the examiner's responsibility to ensure that no undue advantage accrues to the student employing such programs. Only battery operated calculators are permitted in examinations. Power supplies cannot be provided and it is the student's responsibility to see that the batteries are adequate and that the calculator is in good working order. Noisy calculators, such as mechanical and electromechanical types, are not permitted.

Reassessment of a Grade

A student may request the reassessment of a grade by completing, within three months after completing the course, an application form available from the Student Affairs Office. Payment of the $10 fee must be enclosed with the application. If the grade is improved as a result of the reassessment, the fee is refunded.

Withdrawal From The University

The responsibility for initiating withdrawals rests solely with the student. Neither notification to the course instructors nor discontinuance of class attendance will suffice. A student who wishes to withdraw officially from the University during the academic year must secure permission from the Office of the Associate Dean. The appropriate form will be supplied. Students considering withdrawal are strongly urged to consult their Academic Adviser before making a final decision.

The date on which a student's withdrawal is approved by the Office of the Associate Dean is the official date of withdrawal, even if the student stopped attending lectures earlier. **Fees are refundable under conditions outlined in the *General Announcement* available at the Registrar's Office.**

4.4 COURSE NUMBERING SYSTEM

Detailed curricula are listed in the next section under the appropriate school or department. In each case, the courses are grouped under four categories which are common to all programs:

(1) required courses in subjects taught outside the department
(2) required courses in subjects taught inside the department
(3) elective courses in technical subjects to be selected according to rules which vary somewhat from department to department, and
(4) elective courses of a general nature which permit students to extend their education in areas of relevant personal interest.

A core program comprises all required courses. The course numbers indicate the department of origin by the first three digits as follows:

Engineering Departments and Schools

300 — Faculty (non-departmental)
301 — Architecture
302 — Chemical Engineering
303 — Civil Engineering and Applied Mechanics
304 — Electrical Engineering
305 — Mechanical Engineering
306 — Mining and Metallurgical Engineering
308 — Computer Science
409 — Urban Planning

Science Departments

180 — Chemistry
186 — Geology
189 — Mathematics
198 — Physics

The fourth digit in course numbers indicates the level of the course as follows:

0XX – Courses without credit
1XX – Pre-engineering level courses
2XX – Normally taken in the first year
3XX – Normally taken in the second year
4XX – Normally taken in the final year
5XX – Elective courses which may be taken for graduate credit

◎ elective courses

The terminal letters indicate the semester(s) in which the courses are given, i.e. A — Fall, B — Winter, C, L and T — Summer, D — Fall and Winter, N - Winter and Fall, X — Fall evening, Y — Winter evening, Z — Fall and Winter evening.

Where asterisks appear with a prerequisite, they have the following significance:

* a D grade is acceptable for prerequisite purposes

** under special circumstances, the Department may permit this course to be taken as a co-requisite.

The curricula and courses described in the following pages have been approved for the 1981/82 session but the Faculty reserves the right to introduce changes as may be deemed necessary or desirable. The Social Sciences, Humanities, and Administrative Sciences requirements described in this announcement came into effect in the Fall of 1981. For details consult the individual departments.

4.5 SCHOLARSHIPS AND BURSARIES

A limited number of scholarships are available to full time undergraduate students with high academic standing in accordance with the selection policies of the University Scholarships Committee. Except for a few scholarships awarded by external organizations, no formal application is required and all students are automatically considered for the scholarships for which they are eligible. However, to be eligible a student must have completed a minimum of 27 credits, excluding summer session courses, during the previous year and be taking a minimum of 24 credits during the current year.

In addition there are bursaries administered by the Faculty of Engineering and the Student Aid Office for which a formal application must be submitted. For details of specific awards students should consult the Undergraduate Scholarships and Awards Announcement available at the Registrar's Office or enquire at the Office of the Associate Dean, Student Affairs.

5 ACADEMIC PROGRAMS

5.1 FACULTY COURSES

A number of faculty courses are offered and are listed below. These courses are elective and are of a more general nature than the departmental courses.

300-220A ENGINEERING LAW 3(3-0-6). This course presents an overview of the legal system, with particular emphasis being placed on aspects of the law which will affect engineers in their professional and personal activities. Definition and branches of law; Federal and Provincial jurisdiction, civil and criminal law and civil and common law; relevance of statutes; partnerships and companies; agreements (sale, lease and hire, mandate, engineering contracts); types of property, rights of ownership; successions and wills; expropriation; responsibility for negligence; servitudes/easements, privileges/liens, hypothecs/mortgages; statutes of limitations; strict liability of architect, engineer and builder; patents, trade marks, industrial design and copyright; bankruptcy; labour law; general and expert evidence; court procedure and arbitration. The course will conclude with three lectures by representatives of l'Ordre des ingénieurs du Québec on the professional and ethical aspects of engineering practice.

Special Lecturers in Engineering Law
Nat Salomon, B.A., B.C.L. (McG.)
David Kauffman, B.A., B.C.L. (McG.)

302-230B ENVIRONMENTAL ASPECTS OF TECHNOLOGY 3(3-0-6). This course explores the way in which urbanization and industrialization have degraded man's environment. It also includes a survey of pollution control technology. The first eight weeks are devoted to lectures on urbanization, environmental impact of energy conversion, air pollution and water pollution. For the remainder of the semester the class is divided into groups to prepare both sides of a debate on a specific problem. The course is designed for first and second year students who have taken some science courses at the college or university level. (Not open to students who have taken 300-230).

306-310A,B ENGINEERING ECONOMY 3(3-2-4). Basic concepts of economic analysis. Accounting methods. Marginal analysis. Cash flow and time value. Investment opportunity analysis. Expected value analysis techniques. Risk analysis. Analysis of new plant investment opportunities. Economic analysis of research and development. (Not open to students who have taken 300-310)
Professors Papanicolaou, Bilodeau and White

5.2 SCHOOL OF ARCHITECTURE

Director

Derek Drummond, B.Arch.(McG.), M.R.A.I.C., O.A.Q.

Emeritus Professors

John Bland, B.Arch.(McG.), A.A. Dipl., D.Sc. (Carleton), R.C.A., F.R.A.I.C., O.A.Q.
Stuart Wilson, B.Arch.(McG.) RIBA, OAQ

Professors

Bruce Anderson, B.Arch.(McG.) M.Arch.(Harv.), OAQ
Norbert Schoenauer, B.Arch. (Bud.), M.Arch.(McG.), R.C.A., O.A.Q., C.U.Q.
Radoslav Zuk, B.Arch.(McG.), M.Arch.(M.I.T.), M.R.A.I.C., O.A.Q.

Associate Professors

Witold Rybczynski, B.Arch., M.Arch.(McG.), O.A.Q.
John Schreiber, B.Sc.Arch. (Glas.), M.L.A. (Harv.), R.I.B.A., O.A.Q., P.Q.L.A.
Adrian Sheppard, B.Arch.(McG.), M.Arch.(Yale), O.A.Q.
Gentile Tondino, R.C.A.

Assistant Professors

Vikram Bhatt, B.Arch. (Abd), M.Arch.(McG.)
David Covo, B.Sc.(Arch.), B.Arch. (McG.), M.R.A.I.C., O.A.Q.
Pieter Sijpkes, B.Sc.(Arch.), B.Arch.(McG.)

Visiting Critics

George Anselevicius, Joe Carter, Serge Chermeyeff, John Meunier.

Auxiliary Professors

Raymond Affleck, Thomas Blood, Leslie Doelle, Julia Gersovitz, Dan Hanganu, Roy LeMoyne, Seymour Levine, Harry Mayerovitch, Arthur Mendel, Roger Richard, Norman Slater, Alexandre Tzonis.

Associate Member

David Bourke, B.Arch. (McG.), M.Arch. (Harv.), R.C.A., F.R.A.I.C., O.A.Q.

The McGill architectural program is divided into two parts. The first leads to a non-professional degree, Bachelor of Science (Architecture), as a preparation for professional degrees related to Architecture. The second, consisting of a minimum of two semesters for those with the McGill B.Sc. (Arch.) degree, leads to the professional degree, Bachelor of Architecture, which has long been recognized by the Order of Architects of Québec and the Royal Institute of British Architects as representing completion of their educational requirements for membership. The Bachelor of Architecture degree is also recognized by the Commonwealth Association of Architects. Candidates in the first part of the program who plan to go on to the professional degree in Architecture must follow the series of required and elective courses stipulated for professional studies and achieve an acceptable standing both in Design and Construction courses and in their cumulative grade point average. Other students may make appropriate substitutions for certain of the required courses in order to improve their preparation for studies in associated areas. Students must also have had a total of 6 months related professional experience before applying to the B.Arch. program.

ANCILLARY ACADEMIC FACILITIES

Laboratories

The Architectural Workshops — see course 301-303A, Design and Construction I and course 303-304B, Design and Construction II: Mr. Gabriel Deveault and Mr. Raymond Rondeau, technicians, under the direction of Professor Slater.

The Communications Laboratory — see course 301-201A, Communication, Behaviour and Architecture: Anselmo Corsillo, Technician, under the direction of Professor Anderson.

Collections

The Blackader Library, housing the architecture collection, is located in the Redpath Library.

CURRICULUM FOR THE B.Sc.(Arch.) DEGREE

REQUIRED COURSES		COURSE CREDIT	
Non-Departmental Subjects			
303-205A,B	Statics	3	
303-209B	Surveying	3	
303-283B	Strength of Materials	4	
† 303-289A	Building Materials	2	
† 303-384A	Soil Mechanics and Foundations	2	
† 303-385A	Structural Steel Design	2	
† 303-388B	Reinforced Concrete Design	2	
† 303-492A	Structures	2	
308-107A,B	Computers and Architecture	2	22
Architectural Subjects			
301-201A	Communication, Behaviour and Architecture	6	
301-202B	Architectural Graphics and Design Elements	6	
301-217A	Freehand Drawing I	1	
301-218B	Freehand Drawing II	1	
301-231A	History of Architectural Theory I	3	
301-233B	History of Architectural Theory II	3	
301-303A	Design and Construction I	6	
301-304B	Design and Construction II	6	
301-321A	Freehand Drawing III	1	
301-322B	Freehand Drawing IV	1	
301-324T	Sketching School I	1	
301-327A	Summer Project I	1	
301-405A	Design and Construction III	6	
301-406B	Design and Construction IV	6	
301-428A	Summer Project II	1	
301-446B	Mechanical Services	2	
301-447A	Electrical Services	2	
301-448B	Environmental Acoustics	2	55

† Candidates intending not to proceed to the B.Arch. degree may substitute other courses of equal total weight for any of these.

Elective Courses

To be selected from those offered by the School (listed below) and a sequence of approved courses from other departments.

Architectural Electives			
301-363A	Structure, Organization and Form	2	
301-371B	Standardization in Urban Spaces	2	
301-372A	History of Architecture in Canada	2	
301-373A	History of Housing	2	
301-375A	Landscape	2	
301-376A	Structure of Cities	2	
301-377B	Energy Conservation and Buildings	2	
301-378A	Site Usage	2	
301-379C	Summer Course in Europe	4	
301-387A,B,C	Case Studies in Building Performance	2	
301-461B	Freehand Drawing and Sketching	1	
301-383B	Geometry, Architecture and Environment	2	
301-385A	Architectural Theory of the Renaissance	2	
301-410C	Design and Construction V	6	
301-412C	Design and Construction VII	6	
301-480A,C	Seminar on Architectural Judgement	2	
301-481A	Seminar on Architectural Theory in the 20th Century	2	
301-484B	Civic Design	2	
301-486B	Seminar on Architectural Criticism	2	20
Total			**97**

CURRICULUM FOR THE B.Arch. DEGREE

REQUIRED COURSES		COURSE CREDIT	
Non-Departmental Subject			
306-310A,B	Engineering Economy	3	3
Architectural Subjects			
301-411A,B	Design and Construction VI	7	
301-413A,B	Design and Construction VIII	7	
301-420A	Architectural Law	2	
301-429A	Summer Project III	1	
301-430T	Sketching School II	1	
301-435B	Urban Planning I	2	
301-436A	Urban Planning II	2	
301-449A	Professional Practice	2	
301-450B	Specifications	2	26
Electives			4
Total			**33**

COURSES OFFERED BY THE SCHOOL

301-201A COMMUNICATION, BEHAVIOUR AND ARCHITECTURE 6(2-10-6). Design in relation to human communication and behaviour. Visual perception and architectural expression. Techniques of visual communication and graphic design. Modelling with wet materials. Shaping and forming dry materials. Models. Photographic methods of designing and recording. Basic printing methods including silkscreen. Orthographic projection, sketching and architectural drawing.

The Communications Laboratory, including the Photo Lab, is under the direction of Professor Bruce Anderson, (Anselmo Corsillo, Technician).
Professors Anderson and Covo

301-202B ARCHITECTURAL GRAPHICS AND ELEMENTS OF DESIGN 6(2-10-6). (Prerequisite: 301-201A). Orthographic projections, measured drawings, perspective and other conventional representations of architectural elements with reference to their spatial qualities, effects of light, colour and texture. Diagrams and lettering.
Professors Bhatt Covo and Drummond

301-217A FREEHAND DRAWING I 1(0-3-0). Drawing in pencil and charcoal.
Professor Tondino

301-218B FREEHAND DRAWING II 1(0-3-0). (Prerequisite: 301-217A*.) A continuation of course 301-217A.
Professor Tondino

301-231A HISTORY OF ARCHITECTURAL THEORY I 3(3-0-6). An introduction to the study of architectural ideas.
Staff

301-233B HISTORY OF ARCHITECTURAL THEORY II 3(3-0-6). (Prerequisite: 301-231A*). A study of architectural ideals of the present century and of the technical and sociological developments which affected them.
Staff

301-303A DESIGN AND CONSTRUCTION I 6(2-10-6). (Prerequisite: 301-202B). A study of man's need for shelter and for humane environmental amenities. The characteristics of modern building materials and techniques of construction on open sites. Methods of building durable, agreeable and purposeful structures. Design methodology. Aspects of ecology related to architectural design.

The Architectural Workshop is under the direction of Professor Norman Slater (Gabriel Deveault and Raymond Rondeau, Technicians).
Professors Sijpkes and Slater

301-304B DESIGN AND CONSTRUCTION II 6(2-10-6). (Prerequisite: 301-303A). Instruction in the design of buildings with particular emphasis on considerations of construction, structural adequacy, weather and fire resistance, building codes and industrialized building systems. Working drawings and models.

The Architectural Workshop is under the direction of Professor Norman Slater (Gabriel Deveault and Raymond Rondeau, Technicians).
Professors Sijpkes and Slater

301-321A FREEHAND DRAWING III 1(0-3-0). (Prerequisite: 301-218B*). A continuation of course 301-218B.
Professor Tondino

301-322B FREEHAND DRAWING IV 1(0-3-0). (Prerequisite: 301-321*). A continuation of course 301-321A.
Professor Tondino

301-324T SKETCHING SCHOOL I 1(0-0-3). (Prerequisite: 301-218B). A ten day supervised field trip in the late summer to sketch places or things having specific visual characteristics. Students are required to include Sketching School 1 in the B.Sc.(Arch.) program.
Professors Covo and Tondino

301-327A SUMMER PROJECT I 1(0-0-3). (Prerequisite: 301-202B). These projects are assigned by staff members before the end of the session after discussion with the students in terms of objectives, techniques, etc.
Staff

◎ **301-363A STRUCTURE, ORGANIZATION AND FORM 2(2-2-2).** (Prerequisite: 301-202B) The examination and development of communicative, expressive and utilitarian structure, organization and form in objects. Representation, imagery and models. Investigation of subject and/or theme, purpose or objective. Discussion of overt and other possible meanings. Development of approved projects. Written and illustrated briefs or essays with pertinent subject matter.
Professor Wilson

◎ **301-371B STANDARDIZATION IN URBAN SPACES 2(2-0-4).** (Prerequisite: 301-233B). A historical survey of tectonic theories related to the creation of orderly urban environments in the 16th, 17th and 18th centuries; the theories of standardization as applied to the classical "Orders" and their relevance to standardized building components today.
Staff

◎ **301-372A HISTORY OF ARCHITECTURE IN CANADA 2(2-0-4).** (Prerequisite: 301-233B). French, British and American influences in the Maritime Provinces, Québec and Ontario.
Professor Bland

◎ **301-373A HISTORY OF HOUSING 2(2-2-2).** (Prerequisite: 301-233B). Indigenous housing both transient and permanent, from the standpoint of individual structure and pattern of settlements. The principal historic examples of houses including housing in the age of the industrial revolution and contemporary housing.
Professor Schoenauer

◎ **301-374B PHILOSOPHY OF STRUCTURE 2(2-0-4).** (Prerequisite: Satisfactory completion of courses in the Civil Engineering program totalling 45 credits). An inquiry into the principles and factors underlying the development and forms of structures, natural and man-made, and the application of these principles to current design problems.
Professors Redwood and Sijpkes

◎ **301-375A LANDSCAPE 2(2-2-2).** (Prerequisite: 301-233B). Land form, plant life, microclimate; land use and land preservation; elements and methods of landscape design.
Professor Schreiber

◎ **301-376A STRUCTURE OF CITIES 2(2-2-2).** (Prerequisite: 301-304B or permission of instructor). Nature, pattern and life of modern cities. Urban networks, special areas, problems and prospects.
Professor Anderson

◎ **301-377B ENERGY CONSERVATION AND BUILDINGS 2(2-0-4).** (Prerequisite: 301-202B or permission of instructor). Energy consumption in the built environment; architectural means to conserve energy; the potential and limitations of unconventional sources of energy; a comparative study of energy conserving buildings; effects of legislation and financing.
Professors Bhatt and Slater

◎ **301-378A SITE USAGE 2(2-2-2).** (Prerequisite: 301-202B). Arrangement of building developments on the land. Composite patterns resulting from site planning decisions. Scale and distribution of open space. Utilization of space; relationship of private to public domain; spatial determinism and its effect on interaction and development; qualities of interaction and development; qualities of street-scale open space. Site conditions and restrictions. Site engineering, building layout, drainage and services. Regulatory mechanism; incentive and mandatory controls.
Professor Drummond

◎ **301-379C SUMMER COURSE IN EUROPE** (4 credits, Prerequisite: 301-371B). An eight week couse consisting of a three week environmental design project supervised at an English university, a three week sequence of organized visits to buildings in Europe already studied in courses 301-233 and 371 and two research projects for which individual written reports must be submitted.
Staff

◎ **301-383B GEOMETRY, ARCHITECTURE AND THE ENVIRONMENT 2(2-2-2).** (Prerequisite: 301-202B or permission of instructor). Geometry in the formal structure of design. Regular, semi-regular and partly irregular nets or grids, lattices, polygons and polyhedra. Evidence of the presence of these figures and structures in natural objects and natural phenomena. Graphical and physical models. Application to architecture and the human environment.
Professor Wilson

◎ **301-385A ARCHITECTURAL THEORY OF THE RENAISSANCE 2(2-0-4).** (Prerequisite: 301-233B) The elements and composition of Renaissance buildings, studied in relation to the social and intellectual context of the age in which they were constructed.
Staff

◎ **301-387A,B,C CASE STUDIES IN BUILDING PERFORMANCE 2(0-3-3).** (Prerequisite: 301-202B and permission of instructor). Architectural problems relating to the building envelope, building systems, user requirements and the profession, all drawn from local experience in the Montreal area. Practising architects, building owners and others provide input for problem analysis and solution. Meetings, site visits, report writing, problem statement, drawings and specifications. The seminar is limited to 12 students per semester.
Professors Covo, Sheppard and Sijpkes

301-405A DESIGN AND CONSTRUCTION III 6(2-10-6). (Prerequisite: 301-304B).A more developed study of the process of forming an architectural concept involving considerations of purpose, site, desirable spatial relationships, efficient lines of movement, appropriate choice of material, structure and methods of construction, all related to judgements concerning appearance, economy and human relevance. Diagrammatic plans, sections and rough models.
Professors Bhatt and Sheppard

301-406B DESIGN AND CONSTRUCTION IV 6(2-10-6). (Prerequisite: 301-405A). A detailed study of the development of an architectural proposal for a comprehensive building involving a coherent initial concept and subsequent decisions as to the means of fulfilling the requirements skillfully and economically. Preliminary working drawings.
Professors Anderson and Zuk

◎ **301-410C DESIGN AND CONSTRUCTION V 6(2-10-6).** (Prerequisite: 301-304B). A detailed study of the function and structure of the urban environment, including surveys of selected urban areas by recording and analysing specific environmental factors. Architectural and urban design with specific reference to their social implications. Urban renewal and rehabilitation by means of systematic design methods. Techniques of instructional publicity including documentary film-making.
Professors Anderson and Covo

301-411A,B DESIGN AND CONSTRUCTION VI 7(2-12-7). (Prerequisite: 301-406B). A detailed study of the organization of multiple units in a problem involving the repetition of elements with appropriately integrated functional, structural and mechanical systems. Principles of problem analysis, programming, site planning, legal considerations, structural possibilities, feasibility and cost studies.
Professors Schoenauer and Zuk

◎ **301-412C DESIGN AND CONSTRUCTION VII 6(2-10-6).** (Prerequisite: 301-304B). A study of exceptional problems of architectural design in terms of community needs but always involving specific environmental modifications of an actual place to achieve some physical or social betterment.
Professor Sijpkes

301-413A,B DESIGN AND CONSTRUCTION VIII 7(2-12-7). (Prerequisite: 301-406B). A study of complex environmental problems involving conflicting requirements, severe restraints, optimization, adaptability to growth and change, and the integration of building systems. Development of systematic design methods leading to a comprehensive environmental form.
Professors Drummond, Sheppard and Staff

301-420A ARCHITECTURAL LAW 2(2-0-4). Definition and branches of law; distinction between Federal and Provincial jurisdiction, between civil and criminal law and between civil and common law; relevance of statutes, orders-in-council and bylaws; sole practitioners, partnerships and companies; civil law including agreements (sale, lease and hire, mandate, including architectural contracts) and delicts; types of property, rights of ownership; successions and wills; expropriation; responsibility for negligence; servitudes/easements, privileges/liens, hypothecs/mortgages; registration; prescription; strict liability of architect, engineer and builder; organization of architectural professions; patents, trade marks, industrial design and copyright; expert evidence and evidence generally, court procedure and arbitration. (Not open to students who have taken 300-220. Open only to B. Arch. students)
Staff

301-428A SUMMER PROJECT II 1(0-0-3). (Prerequisite: 301-304B). See course 301-327A.
Staff

301-429A SUMMER PROJECT III 1(0-0-3). (Prerequisite: 301-406B). See course 301-327A.
Staff

301-430T SKETCHING SCHOOL II 1(0-0-3). (Prerequisite: 301-324T). Students are required to include Sketching School II in the B.Arch. program.
Professors Covo and Tondino

301-435B URBAN PLANNING I 2(2-2-2). (Prerequisite: 301-406B). Theory and practice. An examination of different basic approaches to urban planning with examples.
Professor Wolfe

301-436A URBAN PLANNING II 2(2-2-2). (Prerequisite: 301-406B). Theory and practice seminar. Detailed analysis of selected examples of the urban planning process, recent and from the past. Each student will be expected to prepare and present a case study.
Professor Farley

301-446B MECHANICAL SERVICES IN BUILDING 2(2-2-2). (Prerequisite: 301-304B). Problems encountered in providing mechanical services in buildings. Physiological and environmental aspects of heat, ventilation and air conditions, estimation of heating and cooling loads and selection and specification of equipment. Sprinkler Systems and plumbing. Construction problems produced by installation of this equipment.
Professor Levine

301-447A ELECTRICAL SERVICES 2(2-2-2). (Prerequisite: 301-304B). Production, measurement and control of light; design of lighting systems; electrical distribution in residential and commercial buildings; Canadian Electrical Code.
Professor Mendel

301-448B ENVIRONMENTAL ACOUSTICS 2(2-2-2). (Prerequisite: 301-304B).Significance of acoustics in architectural design, and in environmental control of buildings. Acoustical requirements in the design of auditoria such as theatres, lecture halls, opera houses, concert halls, churches, motion picture theatres, studios, etc. Principles of noise and vibration control, sound insulating in building construction. Control of mechanical noises and vibrations. Practical noise control in various types of buildings.
Professor Doelle

301-449A PROFESSIONAL PRACTICE 2(2-2-2). (Prerequisite: 301-406B). The architect's relationship to his client; responsibility; business conduct; supervision; arbitration; issuing of certificates; competitions; standard forms of contracts; payment; liens; servitudes; public health; building regulations; fees.
Professors LeMoyne and Sheppard

301-450B SPECIFICATIONS 2(2-2-2). (Prerequisite: 301-406B). Principles of writing architectural specifications; discussion of actual specifications; essays on common building materials and construction practices; practice in specifying for common trades.
Mr. Bourke

◎ **301-461B FREEHAND DRAWING AND SKETCHING 1(0-3-0)** (Prerequisite: 301-324C). Drawing and sketching in pencil, charcoal and other media both in the studio and out-of-doors.
Professor Tondino

◎ **301-480A,C SEMINAR ON ARCHITECTURAL JUDGEMENT 2(2-0-4).** (Prerequisite: 301-304B*). The investigation, by means of analogies with the judicial process in Law, of the criteria of architectural judgement.
Staff

◎ **301-481A SEMINAR ON ARCHITECTURAL THEORY IN THE 20TH CENTURY 2(2-0-4).** (Prerequisite: 301-304B). Analysis and evaluation of significant 20th century projects with reference to contemporary architectural theories.
Professor Zuk

• **301-482B SEMINAR ON LEGAL ASPECTS OF ENVIRONMENTAL CONTROL 2(2-0-4).** (Prerequisite: 301-480A). A survey of those aspects of Canadian law which can protect or beneficially modify the environment in the interests of the community. Maximum of 12 students with preference given to students in architecture.
Staff

◎ **301-484B CIVIC DESIGN 2(2-2-2).** (Prerequisite: 301-304B). The elements of form in buildings and their siting design in the urban setting.
Professor Drummond

◎ **301-486B SEMINAR ON ARCHITECTURAL CRITICISM 2(2-0-4).** (Prerequisite: 301-304B). Lectures and discussions on the development of architectural criticism during the last twenty-five years, with particular reference to its current affinities with literary criticism and linguistics.
Staff

5.3 DEPARTMENT OF CHEMICAL ENGINEERING

Chairman
W.J.M.Douglas, B.Sc. (Qu.), M.S.E., Ph.D. (Mich.)

Professors
J.M. Dealy, B.S.(Kansas), M.S.E., Ph.D.(Mich.), Eng.
M.R. Kamal, B.S.(Illinois) M.S., Ph.D.(Carnegie-Mellon), Eng.
J.H. Vera, B.Mat. (Chile), Ing.Quim. (U.T.E.), M.S. (Berkeley), Dr. Ing. (Santa Maria)
M.E. Weber, B.S.E.(Prin.), Sc.D.(M.I.T.)

Associate Professors
J.-M. Charrier, Dipl. Ing., E.N.S.A.M.(Paris), M.S., Ph.D.(Akron), Eng.
O.M. Fuller, B.Ch.E., Ph.D. (Georgia Inst. Tech.)
A.S. Mujumdar, B.Ch.E. (Bombay). M.Eng., Ph.D. (McG.)
B. Volesky, M.Sc.(Czech. Tech. Univ.), Ph.D. (W.Ont.)

Assistant Professors
R.J. Munz, B.A.Sc., M.A.Sc.(Wat.), Ph.D.(McG.), Eng.
R.J. Neufeld, B.Sc.Agr.(McGill), Ph.D. (W.Ont.)

University Research Fellow
D.G. Cooper, B.Sc., Ph.D.(Tor.)

Associate Members
H.K. Chang, B.Sc.(Taiwan U.), M.S.(Stan.), Ph.D.(Northwestern)
W.H. Gauvin, B.Eng., M.Eng., Ph.D.(McG.), Eng.
H.L. Goldsmith (Experimental Medicine), B.Sc., M.A. (Oxon.), Ph.D.(McG.)

Visiting Professors
T. Dogu, B.Sc.(M.E.T.U.), M.S.(Stan.), Ph.D.(U.Calif. Davis)
G. Dogu, B.Sc.(M.E.T.U.), M.S.(Stan.), Ph.D.(U.Calif. Davis)

Auxiliary Professors
M. Avedesian, P.C. Attwood, R. Carr, N.E. Cooke, R.H. Crotogino, Y. Doganoglu, C. Lamond, D.J. McKeagan, J. Mikhlin, J. Moffatt, F. Peach, N. Peters, A. Rudzinski

The central purpose of engineering is to pursue solutions to technological problems in order to satisfy the needs and desires of society. Chemical engineers are trained to solve the kinds of problems that are typically found in the "chemical process industries", which include the chemical manufacturing, plastics, pulp and paper, petroleum refining, and paint industries as well as substantial portions of the food processing, textile, nuclear energy, biochemical and pharmaceutical industries. The technological problems and opportunities in these industries are often closely linked to social and economic questions. For this reason, practitioners of chemical engineering often deal with these questions when they are working in management, pollution abatement, product development, marketing and equipment design.

The discipline of chemical engineering is distinctive in being based equally on physics, mathematics and chemistry. Application of these three fundamental sciences is basic to a quantitative understanding of the process industries. Those with an interest in the fourth major science, biology, will find several elective courses in the chemical engineering curriculum which integrate aspects of the biological sciences relevant to process industries such as food processing, fermentation and in water pollution control. Courses on the technical operations and economics of the process industries are added to this foundation. The core curriculum concludes with process design courses taught by practising design engineers. Some courses are given in a modular, student-paced format that has proved to be both effective and popular with students. Problem-solving, experimenting, planning and communication skills are emphasized in courses distributed through the core curriculum.

By means of elective courses, students can also obtain breadth or depth in other areas. Management, chemistry, metallurgical engineering, mechanical engineering, computer science and the social sciences are popular choices among today's students.

The chemical engineering curriculum is designed to provide the basic knowledge needed by the engineer in the chemical and process industries. For those who wish to acquire greater depth of knowledge, it also provides the preparation necessary to undertake postgraduate studies leading to the M.Eng. or Ph.D. degrees in chemical engineering. Students completing this curriculum acquire a broad, balanced education in the natural sciences with the accent on application. Thus for those who do not continue in chemical engineering this curriculum provides an exceptionally balanced liberal university education in applied science to complete their formal education. For others, it will form the basis of an educational program that may continue with a variety of studies such as management, business administration, medicine or law. Versatility is, then, one of the most valuable characteristics of the graduate of the chemical engineering program.

ACADEMIC PROGRAM

For those who have completed the Québec CEGEP level program in Pure and Applied Sciences the chemical engineering program comprises 102 credits as outlined below. This program may be completed in 6 semesters, i.e. in 3 years. Students who have passed Chemistry 202 or 302 at the CEGEP level are exempt from course 180-212 or 234, respectively (Introductory Organic Chemistry I and Selected Topics in Organic Chemistry) but still must obtain 102 credits in total, i.e. the corresponding credits are transferred from required courses to free electives.

For appropriately qualified high school graduates from elsewhere, a 4-year program is available, as described in Section 3.1, Admission Requirements.

Students from university science disciplines in some cases have sufficient credits to complete the requirements for the B.Eng. (Chemical) program in 2 years. Those concerned may refer to Sections 3.1 and 3.2.

Students must obtain a C grade or better in all core courses. For the Department of Chemical Engineering, core courses include all required courses (departmental and non-departmental) as well as technical electives. A "D" is a passing grade in elective courses in Social Sciences, Humanities and Administrative Studies and in any free elective courses taken.

CURRICULUM FOR THE B.ENG. DEGREE IN CHEMICAL ENGINEERING

REQUIRED COURSES		COURSE CREDIT	
Non-Departmental Courses			
180-212A,B	Introductory Organic Chemistry I	4	
180-233B	Selected Topics in Physical Chemistry	3	
180-234A,B	Selected Topics in Organic Chemistry	3	
189-261A,B	Differential Equations I	3	
189-262A,B	Differential Equations II and Linear Algebra	3	
189-263A,B	Advanced Calculus	3	
189-264A,B	Introduction to Boundary Value Problems	3	
300-220A	Engineering Law	3	
306-310A,B	Engineering Economy	3	
308-208A,B	Computers in Engineering	2	30
Chemical Engineering Courses			
302-201A	Chemical Process Principles I	4	
302-210A	Fluid Mechanics	4	
302-221A	Thermodynamics I	3	
302-222B	Thermodynamics II	3	
302-291B	Instrumental Measurements Laboratory	4	
302-311A	Heat Transfer	4	
302-312B	Mass Transfer	4	
302-351A	Separation Processes	4	
302-360A	Technical Paper I	1	
302-392A	Chemical Engineering Laboratory I	4	
302-393B	Chemical Engineering Laboratory II	4	
302-423A	Chemical Reaction Engineering	3	
302-453A	Process Design	3	
302-454B	Design Project	4	
302-455A	Process Control	3	
302-456A	Process Equipment Design	4	
302-462A	Technical Paper II	1	57
ELECTIVE COURSES			
Technical Electives			
Course to be selected from those approved by the Department. (See guidelines below)			9
Electives in Social Sciences, Humanities, Administrative Studies			6
Total			**102**

For good students starting their B. Eng. (Chemical) studies in September, a program which may be completed in six semesters is given below:

Semester 1

		Credits
Diff.Eq.I	(189-261A)	3
Advanced Calculus	(189-263A)	3
Chem.Proc.Princ.I	(302-201A)	4
Thermodynamics I	(302-221A)	3
Computers	(308-208A)	2
		15

Semester 2

		Credits
Organic Chemistry I	(180-212B)	4
Diff.Eq.II and Lin.Alg.	(189-262B)	3
Fluid Mechanics	(302-210B)	4
Thermodynamics II	(302-222B)	3
Instrumental Meas.Lab.	(302-291B)	4
		18

Semester 3			Semester 4		
Selected Topics in Org. Chem.	(180-234A)	3	Chemistry	(180-233B)	3
Heat Transfer	(302-311A)	4	Mathematics	(189-264B)	3
Separation Processes	(302-351A)	4	Mass Transfer	(302-312B)	4
Chem.Eng.Lab.I	(302-392A)	4	Chem.Eng.Lab.II	(302-393B)	4
Elective +		3	Technical Paper I	(302-360B)	1
			Elective +		3
		18			18
Semester 5			**Semester 6**		
Process Control	(302-455A)	3	Design Project	(302-454B)	4
Chem.Reaction Engineering	(302-423A)	3	Electives		12
Process Design	(302-453A)	3			16
Process Equipment Design	(302-456A)	4			
Technical Paper II	(302-462A)	1			
Elective +		3			
		17			

+ must include 306-310A,B and 300-220A in one of these semesters

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TECHNICAL ELECTIVES

A minimum of 9 credits of the 102 credit total must be chosen from a list of Technical Electives approved by the Department. The purpose of this requirement is to provide students with an area of specialization within the broad field of chemical engineering. Alternatively, some students use the technical electives to increase the breadth of their chemical engineering training.

The Technical Elective Courses currently approved by the department are as follows:

302-356A,B	Computer Methods in Chemical Engineering
302-363A,B	Projects in Chemical Engineering
302-370B	Models of Socio-technical Systems
302-373A	Introduction to Industrial Microbial Processes
302-374B	Air Quality Control Systems
302-402B	Chemical Process Principles II
302-403B	Chemical Process Economics
302-451B	Energy Technologies
302-452B	Particulate Systems
302-471B	Industrial Water Pollution Control
302-472A	Industrial Air Pollution Control
302-481A	Polymer Engineering
302-483B	Industrial Rheology
302-486B	Textile Technology
302-494A,B &-495A,B	Research Project and Seminar
302-551A	Techno-Economics of the Petrochemical Industry
302-571B	Process Dynamics & Control
302-594B	Fermentation Engineering

Courses 481A, 483B, and 486B comprise a Polymeric Materials sequence. Additional courses in this area are available in the Chemistry department (e.g. 180-455B) or at the graduate level (302-682, 302-684). The department has considerable expertise in the polymer area, which is of increasing industrial importance.

Courses 373A, 483B and 594B make up a sequence in **Biochemical Engineering-Biotechnology**. Students interested in this area may take additional courses, particularly those offered by the School of Food Science of the Faculty of Agriculture, and courses in biochemistry and microbiology (e.g. 362-442A, 377-200A, 376-413B, 336-320A, 336-321B, 336-322B). The food, beverages and pharmaceutical industries are large industries in the Montreal area and these courses are relevant to these industries as well as in new high technology applications of biotechnology.

The third area in which there is a sequence of courses is **Pollution Control**. The department offers three courses in this area: 302-374B, 302-471B and 302-472A. As some water pollution control problems are solved by microbial processes, course 302-373A is also relevant to the pollution control area. Likewise as the solution to pollution problems frequently involves removal of particulate matter from gaseous or liquid streams, the course 302-452B is also relevant. Finally, additional courses in this area are listed under the section of this Announcement entitled Environmental Studies and Pollution Control.

Note that many of the technical electives are offered only in alternate years. Students should therefore plan their electives as far ahead as possible. With the approval of the instructor and academic adviser, students may also take graduate courses as technical electives.

ELECTIVES IN SOCIAL SCIENCES, HUMANITIES, ADMINISTRATIVE STUDIES

The program provides 9 credits in this area, of which 3 credits are for the required course Engineering Law 300-220A and 6 credits are for elective courses in Social Sciences, Humanities or Administrative Studies.

FREE ELECTIVE COURSES

Students who have obtained exemptions for courses, i.e. for CEGEP courses equivalent to 180-212 or 180-234, or who take more than the minimum requirements for the degree, may choose university level courses in any field. Approval of a free elective course requires only that no timetable conflicts are created and that it not be a repetition of material already covered in the curriculum or already mastered by the student.

CURRICULUM COMMITTEE

The curriculum committee is composed of three students, elected by their classes, and two staff members. This committee provides a forum for all matters involving undergraduate student/staff interactions. While the primary concern is with matters of curriculum and courses (their content, evaluation, marking, scheduling, teaching methods, etc.), the committee has also taken up a number of other matters in recent years, e.g. working space, facilities (equipment and libraries), plant tours.

CANADIAN SOCIETY FOR CHEMICAL ENGINEERING

The Chemical Engineering Student Society has for many years been affiliated both with the CSChE (Canadian Society for Chemical Engineering) and with the AIChE (American Institute of Chemical Engineers). For a nominal fee students receive "Chemistry in Canada", a monthly publication, and the AIChE Student Members Bulletin as well as other privileges of student membership in the two societies. Locally, the student chapter also organizes a series of social, educational and sporting events. For example, recent events have included student-professor banquets and Christmas parties, dances, speakers, broomball games and joint meetings with the Montreal Section of the CSChE. The latter gives students a chance to mix with practicing chemical engineers.

SCHOLARSHIPS AND BURSARIES

Certain bursaries and scholarships are open to students in the department. Interested students should consult the Undergraduate Scholarships and Awards Announcement available from the Registrar's Office. Prof. Charrier should be consulted regarding specific scholarships and bursaries.

COURSES OFFERED BY THE DEPARTMENT

302-201A CHEMICAL PROCESS PRINCIPLES I 4(3-0-9). (Co-requisite: 189-261A). Solution of chemical engineering problems by the application of the laws of conservation of mass and energy. Applications in steady and transient processes. Self-paced, modular course.
Professors Munz and Volesky

302-210B FLUID MECHANICS 4(3-1-8). Fluid properties; fluid statics; basic concepts and equations of fluid dynamics including the continuity and Navier-Stokes equations, Bernoulli's equation and application to flow measuring devices; dimensionless groups and similitude; momentum theorems, pumps; two dimensional potential flow; drag and boundary layers; pipe flow; losses in valves and fittings.
Professor Kamal

302-221A CHEMICAL ENGINEERING THERMODYNAMICS I 3(3-0-6). (Co-requisite 189-263A). Work and mechanical energy, first and second laws of thermodynamics, use of property charts and tables, relationships between thermodynamic properties, mechanical energy balance, heat engines and refrigerators, use of equations of state, estimation of equilibrium properties, phase equilibrium in single component systems.
Professors Dealy and Vera

302-222B CHEMICAL ENGINEERING THERMODYNAMICS II 3(3-0-6). (Prerequisite: 302-221A). Thermodynamics of mixtures, phase equilibrium in multicomponent systems, chemical reaction equilibrium in homogeneous and heterogeneous systems.
Professor Vera

302-230B ENVIRONMENTAL ASPECTS OF TECHNOLOGY 3(3-0-6). The impact of urbanization and technology on man's environment will be explored. Topics include urbanization: causes, effects, land use regulations; transportation technology and environmental implications; environmental impact of energy conversions; energy policy alternatives; formulation of energy and environmental policy; air pollution: sources, effects, control; water pollution: sources, effects, control.
Professor Neufeld and Staff

302-291B INSTRUMENTAL MEASUREMENTS LABORATORY 4(1-3-8) Statistical analysis of experimental data; measurement techniques of importance in engineering applications, theory and practice; introduction to instrument selection and design.
Professor Munz

302-311A HEAT TRANSFER 4(3-0-9). (Prerequisites: 302-221A*, 302-210B*, 189-264A,B*). Transport of heat by conduction; transport by convection in free and forced flows; transport by radiation. Mathematical formulation and solution of heat transfer problems: Design of heat transfer equipment.
Dr. Doganoglu

302-312B MASS TRANSFER 4(3-1-8). (Prerequisites: 302-311A*, 302-351A). Transport of matter by diffusion. Transport by convection in free and forced flows. Design of mass transfer equipment: packed bed contactors, dryers etc.
Professors Mujumdar and Douglas

302-351A SEPARATION PROCESSES 4(4-0-8) (Prerequisites: 308-208, 302-201*, 302-222*). Fundamental concepts and practical techniques for solving problems relating to equilibrium stage processes. Distillation, solvent extraction, particularly solid-liquid leaching and liquid-liquid extraction. Practical engineering problems such as the development of process schemes, equipment and material selection, preliminary design and sizing and operation of equipment.
Dr. Avedesian

◎ **302-356A COMPUTER METHODS IN CHEMICAL ENGINEERING 3(2-0-7).** Application of scientific computers in process design, chemical engineering analysis and research. Process simulation; structure and design of general purpose programs; linear programming; numerical analysis. Batch and conversational computer modes are used. (Alternate years, next given 1981-82)
Staff

302-360A,B TECHNICAL PAPER I 1(0-0-3). A technical paper prepared according to instructions issued by the Department.
Mr. Attwood

◎ **302-363A,B PROJECTS IN CHEMICAL ENGINEERING I 2(1-0-5).** (Prerequisite: 302-201A*). Projects on social or technical aspects of chemical engineering practice. Students must suggest their own projects to be approved and supervised by a member of the staff. Students may work in groups.
Staff

◎ **302-370B MODELS OF SOCIO-TECHNICAL SYSTEMS 3(3-0-6).** Introduction to the use of computer simulation for the study of social system behaviour. Expression of theories in computer simulation form. Interpretation of simulation results. Comparison between simulation models and mental models. World models developed at M.I.T. (Alternate years, next given 1981-82).
Staff

◎ **302-373A INTRODUCTION TO INDUSTRIAL MICROBIAL PROCESSES 3(3-1-5).** (Prerequisite: 180-212A,B). Introduction to the fundamental principles of the microbial world, cell structure and growth. Comparative study of the morphology, biology and relationships of algae, fungi, bacteria and viruses. Energy transformations. Survey of selected industrial microbial processes of importance in producing food, antibiotics, organic acids, polymers, etc. Microbial leaching. Ecological aspects and waste-water treatment. Single-cell protein synthesis.
Professors Neufeld and Volesky

◎ **302-374B AIR QUALITY CONTROL SYSTEMS 3(3-0-6).** (Prerequisites: penultimate or final year standing). Engineering, economic, and societal factors are integrated into an overall air quality control program. Tools proposed in the literature for preparing and evaluating a plan are presented. A specific region is described and students form teams to develop an appropriate pollution control program. Proposals are discussed and criticized by students and staff. (Alternate years, next given 1983-84).
Professor Weber and Staff

◎ **302-381B POLYMER TECHNOLOGY 3(3-0-6).** (No prerequisites). Principles and practical aspects of the design and fabrication of thermoplastic and thermosetting polymeric materials. Classes of materials, properties, processing (casting, compression and injection molding, extrusion, thermoforming, reinforced moulding, etc.), finishing. Not open to Chemical Engineering students.
Professor Charrier

302-392A CHEMICAL ENGINEERING LABORATORY I 4(2-3-7). (Prerequisite: 302-291B). Planning, execution, and evaluation of experimental projects; design of experiments; interpretation of experimental results; statistical analysis of experimental data; effective work in groups; selected laboratory exercises on chemical engneering topics.
Professor Weber and Staff

302-393B CHEMICAL ENGINEERING LABORATORY II 4(1-3-8). (Prerequisite: 302-392A*). Guided practice in planning and executing experimental projects on chemical engineering topics.
Professor Weber and Staff

◎ **302-402B CHEMICAL PROCESS PRINCIPLES II 3(3-0-6).** (Prerequisites: 302-201A, 180-234A,B*). Applications of physical, organic and inorganic chemistry to case studies in chemical process contexts. The cases chosen emphasize process and product development in the Canadian chemical industry.
Staff

◎ **302-403B CHEMICAL PROCESS ECONOMICS 3(3-0-6)** (Prerequisites: 302-311A*, 302-351A*). Quantitative analysis of economic problems relating to chemical processes. Evaluation of economic optima for operating plants. Methods of cost estimation for new plants. Interest and investment costs; depreciation; alternative investments.
Dr. Avedesian

302-423A CHEMICAL REACTION ENGINEERING 3(3-0-6). (Prerequisites: 302-201A, 180-233B*). Application of kinetics of homogeneous chemical reactions in calculating reactor size production rate, selectivity and yield; interaction between chemical reaction and heat transport; kinetics of heterogeneous catalysis; catalyst properties; mass and heat transfer in heterogeneous reactions; reactor size and production rate for heterogeneous reactions.
Professor Fuller

◎ **302-451B ENERGY TECHNOLOGIES 3(3-0-6).** (Prerequisites: 302-222B and 302-311A, or equivalent). Traditional energy technologies (fossil fuels, hydroelectric). Nuclear power generation. Advanced coal combustion technology. Synthetic

fuels from coal and other sources. Oil sands technology. Other technologies, including solar, wind, geothermal, etc. Energy conservation in plants and in process design. Thermodynamic evaluation of energy use. (Alternate years, given 1982-83).
Professor Dealy

◎ **302-452B PARTICULATE SYSTEMS 3(3-0-6).** (Prerequisites: 302-201A, 302-210B*). Study of operations involving multiphase systems with one of the phases finely sub-divided as bubbles, drops or particles. Applications in evaporation, crystallization, fluidization etc. (Alternate years, given 1982-83).
Professor Munz

302-453A PROCESS DESIGN 3(3-0-6). (Prerequisites: 302-311A*, 302-312B*, 302-351A**). Integration of unit operations and chemical engineering science in the design of chemical plants. The evaluation of the optimum combination of the purchase price and operating costs is emphasized.
Dr. Mikhlin

302-454B DESIGN PROJECT 4(2-0-10). (Prerequisite: 302-453A). Process design brief will be prepared for an industrial system involving heat and mass transfer operations. The topic will be assigned to give sufficient scope for selecting design alternatives.
Drs. Mikhlin, Douglas, Cooke, Carr, McKeagan, Moffatt, and Messrs. Rudzinski, Lamond

302-456A PROCESS EQUIPMENT DESIGN 4(3-1-8). (Prerequisites: 302-201A, 302-291B). Process equipment design fundamentals, engineering materials, process equipment drives, chemical process graphics, applications such as distillation column, heat exchanger, chemical reactor design.
Staff

302-455A PROCESS CONTROL 3(3-0-6). (Prerequisites: 302-311A*, 302-351A*). Linear incremental models of processes; development and representation of control strategies; measurement and interpretation of transient response; controller tuning; feedforward and cascade control systems. Assignments use an instrumented process laboratory, analog computer, and minicomputer control system.
Staff

302-462A,B TECHNICAL PAPER II 1(0-0-3). (Prerequisite: 302-360A). A technical paper prepared according to instructions issued by the Department.
Dr. Crotogino

◎ **302-464A,B PROJECTS IN CHEMICAL ENGINEERING II 2(1-0-5).** (Prerequisite: 302-363A,B). Projects on social or technical aspects of chemical engineering practice. Students must suggest their own projects to be approved and supervised by a member of the staff. Students may work in groups.
Staff

◎ **302-471A INDUSTRIAL WATER POLLUTION CONTROL 3(3-3-6).** (Prerequisite: 302-210B or equivalent). Effect of wastes on streams, water quality criteria, standard analytical methods and instrumentation, waste water sampling techniques and sample preservation, conservation of waste water, equalizing and proportioning; treatment processes; physical, chemical and biological methods; specific industrial applications with emphasis on Canadian case studies. (Alternate years, next given 1983-84).
Professors Volesky and Neufeld

◎ **302-472A INDUSTRIAL AIR POLLUTION CONTROL 3(3-0-6).** (Prerequisite: 302-210B or equivalent). Air quality standards, air surveys, process design considerations, dispersion theory and stack design; dust cleaning methods, design of scrubbers, case studies in the Canadian context. (Alternate years, given 1982-83).
Dr. Cooke

◎ **302-481A POLYMER ENGINEERING 3(3-0-6).** (Prerequisites: 302-210B, 180-212A,B.) The application of engineering fundamentals to the preparation and processing of polymers. Classification and characterization of polymers, reaction media and kinetics of polymerization, reactor design, mechanical behaviour of polymers, visco-elasticity and rheology, processing techniques; extrusion, molding, etc.
Professor Charrier

◎ **302-483B INDUSTRIAL RHEOLOGY 3(2-1-6).** (Prerequisites: 302-210B or equivalent). An introduction to the basis of mechanical testing of viscous liquids and pastes in process industries. Topics include: fundamentals of rheology, theoretical basis of rheometry, rheology of suspensions, instrumentation for measurement of viscosity and other rheological properties in the laboratory and in the plant; flow of non-Newtonian fluids in pipes; applications in the paint, food, pharmaceutical and plastics industries. Plant visits and laboratory experience. (Alternate years, next given 1983-84).
Professor Dealy

◎ **302-486B TEXTILE TECHNOLOGY 3(3-0-6).** (Prerequisite: 302-210B or equivalent). Application of engineering principles to the following topics: chemical constitution and properties of fibre-forming polymers, theories of fibre structure; relations between molecular structure and properties of natural and man-made fibres; staple and filament yarns; blending of fibres; effect of operating variables on yarn properties; weaving and knitting technology; finishing of fibres, textile testing. (Alternate years, given 1982-83).
Mr. Peach

◎ **302-494A,B,D RESEARCH PROJECT AND SEMINAR 3(1-6-2).** (Prerequisite: 302-393B). Independent study and experimental work on a topic chosen.
Staff

◎ **302-495A,B,D RESEARCH PROJECT AND SEMINAR 4(1-9-2).** (Prerequisite: 302-393B). Independent study and experimental work on a topic chosen by consultation between the student and the Departmental staff.
Staff

◎ **302-551A TECHNO-ECONOMICS OF THE PETROCHEMICAL INDUSTRY 3(3-0-6).** (Prerequisites: 302-351, 302-310 or Instructor's permission). The basic raw materials for chemical production (natural gas, oil, coal) and the energy-refinery-petrochemicals interface; techno-economic study of the major products of the petrochemical industry: feedstocks, processes, technical and economic requirements, markets, and the impact of new technologies. (Alternate years, next given 1983-84).
Professor Kamal

◎ **302-571B PROCESS DYNAMICS AND CONTROL 3(2-0-7).** (Prerequisite: 302-455 or equivalent). Mathematical modeling of industrial processes. Dynamic characteristics of models and real processes. Computer control techniques and applications in the process industries. Application of modern control theory. (Alternate years, next given 1983-84).
Staff

◎ **302-594B FOOD AND FERMENTATION ENGINEERING 3(3-0-6).** (Prerequisite: 302-373A or equivalent). Engineering aspects of biochemical and microbial processes, selected unit operations of food processing. Agitation and aeration, related mass transfer, design and scale-up of fermentation equipment. Enzyme technology, sterilization techniques, separation processes. Contemporary, food and fermentation technology. Instrumentation. (Alternate years, given 1982-83).
Professors Volesky and Neufeld

5.4 DEPARTMENT OF CIVIL ENGINEERING AND APPLIED MECHANICS

Chairman

P.J. Harris, B.Sc. (Man.), M.Eng., Ph.D. (McG.), Eng.

Professors

G.S. Cavadias, B.Eng.(Athens), M.Sc.(McG.), Ph.D.(Lond.)
M.S. Mirza, B.Eng.(Karachi), M.Eng., Ph.D. (McG.),Eng.
J.C. Osler, B.Eng.(McG.), S.M.(Harv.),Eng.
R.G. Redwood, B.Sc. (Eng.) (Bristol), M.A.Sc. (Tor.), Ph.D. (Bristol), Eng.
S.B. Savage, B.Eng.(McG.), M.Sc.(Cal.Tech.), Ph.D.(McG.)
B. Stafford Smith, B.Sc. (Manc.), Ph.D. (Bristol) D.Sc.(S'ton.).
C.J. Turkstra, B.Sc.(Qu.), M.S.(Ill.), Ph.D.(Wat.), Eng.
R.N. Yong, B.A.(Wash. & Jeff.), B.S.C.E.(M.I.T.), M.S.C.E.(Purdue), M.Eng., Ph.D.(McG.), Eng.

Associate Professors

V.H. Chu, B.S.Eng.(Taiwan), M.A.Sc. (Tor.), Ph.D.(M.I.T.), Eng.
R.G. Cox, B.A., Ph.D. (Cantab.)
R.D. Japp, B.Eng., M.Eng., Ph.D.(McG.) Eng.
D. Mitchell, B.A.Sc., M.A.Sc., Ph.D.(Tor.), Eng.
D.A. Selby, B.Eng., M.Eng.(McG.), Eng.
L.D. Spraggs, B.A.Sc. (UBC), M.S. Ph.D. (Stan.)

Assistant Professors

R. Gehr, B.Sc.(Eng.)(Rand), M.A.Sc.,Ph.D.(Tor.)
S.C. Shrivastava, B.Sc.(Eng.) (Vikram), M.C.E. (Del.), Eng. Sc.D. (Col.)

Auxiliary Professors

L.J. Arcand, P. Boonsinsuk, R.H. Clark, H. El-Khoraibie, E. Fattah, N. Foroud, A. Frayne, G.W. Joly, L.A. McCoomb, D. Murray, G.D. Ransford, J.M. Rebelo, L.A. Rivard, A. Sethi, S.L. Suen, M. Tabba, D. Whitehead

Senior Demonstrators

F. Bronet, S.L. Macek, N.A. Osler

Civil engineering can be defined as that branch of engineering which deals with systems of constructed facilities. Responsibilities of civil engineers thus include the planning, development, and construction of transportation systems, urban services, resource development projects, waterways, and structures varying from skyscrapers to rocket vehicles. Applied mechanics refers to branches of science and analysis upon which the practice of civil engineering is based.

As with all other branches of engineering, rapidly expanding knowledge in science and mathematics coupled with the development of computers has led to great changes in the practice of civil engineering. The curriculum of the department fully reflects these changes, and the foundation provided will enable graduates to cope with further changes in the future.

The required courses ensure a sound scientific and analytical basis for professional studies through courses in mechanics, solid mechanics, fluid mechanics, soil mechanics, structural analysis, systems analysis and mathematics. Fundamental concepts are applied to various fields of practice in both required and elective courses.

By a suitable choice of elective courses, students can attain advanced levels of technical knowledge in particular specialized areas. After completing such a program they will then be well prepared for professional careers or for graduate studies at any prominent university in North America or abroad. In professional practice civil engineers may be concerned with detailed design, or with planning and project management, both requiring the technical understanding provided by their engineering studies; they may be concerned with projects varying in size from those costing multi-millions of dollars to small schemes costing several thousands of dollars. Diverse professional careers may be followed in either the private or public sectors.

Alternatively, students can elect to develop their interests in a more general way by combining courses within the department with one or two courses from other departments or faculties. Such a general program of studies in civil engineering has proven to be an excellent basis for careers in urban government and business management.

CURRICULUM FOR THE B.ENG. DEGREE IN CIVIL ENGINEERING AND APPLIED MECHANICS

REQUIRED COURSES

Non-Departmental Subjects

		COURSE CREDIT	
186-221A	General Geology	3	
189-261A,B	Differential Equations I	3	
189-262A,B	Differential Equations II and Linear Algebra	3	
189-263A,B	Advanced Calculus	3	
189-264A,B	Introduction to Boundary Value Problems	3	
304-271B	Electric Power Utilization	2	
305-290A,B	Graphics	2	
306-218A,B	Principles of Applied Thermodynamics	2	
306-310A,B	Engineering Economy	3	
308-208A,B	Computers in Engineering	2	26

Civil Engineering Subjects

303-201B	Structural Materials	2	
303-202A	Probabilistic Systems	3	
303-203A	Technical Reporting	1	
303-204B	Surveying Field School	1	
303-205A,B	Statics	3	
303-206A,B	Dynamics	3	
303-207A,B	Solid Mechanics	4	
303-208B	Deterministic Systems	3	
303-209B	Surveying	3	
303-220A,B	Technical Papers	1	
303-310B	Municipal Systems	3	
303-312B	Soil Mechanics	4	
303-313A	Structural Analysis I	3	
303-314A	Structural Design I	3	
303-315B	Structural Design II	3	
303-319B	Transportation Engineering	3	
303-321A	Fluid Mechanics	3	
303-322B	Hydraulics	3	
303-323A	Hydrology and Water Resources	3	
303-417A	Foundations	3	
303-418A,B	Project	3	58

ELECTIVE COURSES

Technical Electives

Twelve credits to be selected from those listed below offered by the Department, or from other suitable undergraduate or 500 level graduate courses.

303-416B	Transportation Economics	2
303-430A	Sanitary Engineering	3
303-431B	Stream Pollution and Control	3
303-433B	Urban Planning	2
303-439B	Photogrammetry and Interpretation	3
303-440A	Traffic Engineering	3
303-445A	Construction Project Management	3
303-450A	Soil Behaviour	3
303-451B	Highway and Airport Design	2
303-460A	Structural Analysis II	3
303-462B	Design of Steel Structures	3
303-463A	Design of Concrete Structures	3
303-470A,B	Research Project	3
303-514B	Structural Mechanics	3
303-540A	Urban Transportation Planning	3
303-546A,B	Selected Topics in Civil Engineering	3

303-571B	Hydraulic Machines	3	
303-573A	Hydraulic Structures	3	
303-577B	Sediment Transport	3	12
Humanities, Social Sciences and Administrative Studies. Three courses selected from a list of approved courses			9
Total			**105**

COURSES OFFERED BY THE DEPARTMENT

303-201B STRUCTURAL MATERIALS 2(2-2-2). Study of structural materials from the viewpoint of atomic bonding, crystal structure and imperfections, and their relationship to mechanical behaviour. Engineering properties of ferrous and nonferrous metals, ceramics, concrete, timber and timber products, polymers and methods of their determination. Design of concrete mixes. Corrosion. Environmental influences on materials selection and applications.
Drs. Sethi and Boonsinsuk

303-202A PROBABILISTIC SYSTEMS 3(3-1-5). An introduction to probability and statistics with applications to Civil Engineering design. Descriptive statistics, common probability models, statistical estimation, regression and correlation, acceptance sampling.
Professor Cavadias

303-203A TECHNICAL REPORTING 1(1-0-2). Students will be encouraged to communicate ideas and factual data, either verbally, visually or in writing, relating to various situations encountered in engineering practice. Formal assignments will be limited to four short written submissions, including one group assignment, while the remainder of the course will emphasize active participation in class.
Professor Osler

303-204B SURVEYING FIELD SCHOOL 1(0-0-3). (Co-requisite: 303-209B). This compulsory surveying field school is held each spring immediately after the examination period.
Professor Selby

303-205A,B STATICS 3(3-2-4). Systems of forces and couples, resultants, equilibrium. Trusses, frames and beams, reactions, shear forces, bending moments. Centroids, centres of gravity, distributed forces, moments of inertia. Friction, limiting equilibrium, screws, belts.
Professor Cox and Mr. Joly

303-206A,B DYNAMICS 3(3-2-4). (Prerequisite: 303-205A,B; Co-requisites: 189-261A,B and 189-263A,B. Kinematics and kinetics of particles, systems, and rigid bodies; mass-acceleration, work-energy, impulse-momentum. Moving coordinate systems. Lagrange's equations. Vibrations and waves.
Dr. Fattah and Mr. Joly

303-207A,B SOLID MECHANICS 4(3-2-7). (Prerequisites: 303-205A,B*, 305-290A,B** or equivalent, 308-208A,B**). Stress-strain relationships; elastic and inelastic behaviour; performance criteria. Elementary and compound stress states, Mohr's circle. Shear strains, torsion. Bending and shear stresses in flexural members. Deflections of beams. Statically indeterminate systems under flexural and axial loads. Columns. Dynamic loading.
† Two-hour laboratory periods and problem periods, alternate weeks.
Professors Mirza, Mitchell, Redwood and Dr. El-Khoraibie

303-208B DETERMINISTIC SYSTEMS 3(3-1-5). (Co-requisites: 189-261A,B, 308-208A,B). Introduction to the systems approach and optimization techniques; application of linear programming; critical path methods; decision analysis; an introduction to mathematical modelling and numerical methods in problem solving.
Professor Spraggs

303-209B SURVEYING 3(2-3-4). (Prerequisite: 308-208A,B**). The construction and use of modern survey instruments; transit, level, etc.; linear and angular measurements and errors; types and magnitudes; probability; significent figures; units of measurements; simple circular curve; theory and use of the Polar Planimeter; engineering and architectural applications of surveying measurements.
Professor Selby

303-220A,B TECHNICAL PAPERS 1(0-0-3). Two technical papers are to be presented, one in the U2 year and one in U3. These are normally prepared during the summer months, and are to be on a technical topic, related, if possible, to the student's summer employment. Detailed instructions are provided in the spring, and papers may be submitted either in early September or early January. Registration in this course should be in the semester in which the second paper is submitted.
Professor Osler

303-281A ANALYTICAL MECHANICS 3(3-1-5). (Co-requisites: 189-261A,B and 189-263A,B). Kinematics of particles, dynamics of particles, Newton's laws of motion. Work, conservative forces, potential energy, principle of virtual work. General three dimensional and constrained motion of particles.

Relative motion and general moving frames of reference, d'Alembert's principle. Angular momentum of particles, central force fields and orbits. Dynamics of a system of particles, kinetic energy and angular momentum, collisions and impulse bodies of variable mass. General motion of rigid bodies, moments and products of inertia, principal axes, angular momentum and kinetic energy of rigid bodies, gyroscopic precession. Generalized coordinates and forces, Lagrange's equations, Hamilton's principle and Hamilton's equations.
Professors Chu and Cox

303-283B STRENGTH OF MATERIALS 4(3-3-6-). (Prerequisite: 303-205A,B*). Structural behaviour, trusses, statically determinate beams, frames, and arches; moments of inertia, stress, strain, properties of materials; bending and shearing stresses; torsion; fixed and continuous beams; reinforced concrete beams; columns; combined stresses; Mohr's circle.
Professor Selby

303-289A BUILDING MATERIALS 2(2-2-2). Microscopic and macroscopic considerations of metals, Portland cement, concrete and polymers at an introductory level.
Drs. Sethi and Boonsinsuk

303-310B MUNICIPAL SYSTEMS 3(3-2-4). (Prerequisite: 303-321A*). Theory and design of municipal services. Water, wastewater, and stormwater distribution systems; pumps; network analysis and optimization; storage. Introduction to water and sewage treatment and solid wastes engineering.
Professor Gehr

303-312B SOIL MECHANICS 4(3-3-6). (Prerequisites: 303-207A,B*, 186-221A*). Identification and classification of soils. Physical and engineering properties and their measurement; permeability, compressibility, shear strength, stress-strain characteristics. Effective stress principle. Consolidation theory. Groundwater and seepage. Frost action. Limiting equilibrium, introductory earth pressure theory. Three hour laboratory and problem period, alternate weeks.
Professors Japp and Osler

303-313A STRUCTURAL ANALYSIS I 3(3-1-5). (Prerequisite: 303-207A,B). Virtual work and energy methods; statically indeterminate systems, continuous beams and frames; slope deflection and moment distribution methods; influence lines; matrix methods; elementary plastic analysis.
Professor Stafford Smith

303-314A STRUCTURAL DESIGN I 3(3-1-5). (Prerequisite: 303-207A,B*). Design in steel and timber. Properties of structural steels, classification and behaviour of steel structures. Allowable stress and limit states design. Members in axial tension and compression; flexure, with and without lateral support; reinforced beams, unstiffened plate girders. Introduction to beam-columns. Connections. Truss design. Fabrication and erection. Properties of timber, timber beams, columns and connections.
Professors Selby and Shrivastava

303-315B STRUCTURAL DESIGN II 3(3-1-5). (Prerequisite: 303-207A,B*). Physical properties of concrete; creep and shrinkage; the design process; behaviour and design of reinforced concrete members in compression, tension, bending, shear, torsion and combined loadings; bond and anchorage; continuous beams and slabs; footings; structural systems. Group projects.
Professors Mirza and Mitchell

303-319B TRANSPORTATION ENGINEERING 3(3-1-5). (Prerequisites; 303-202A, 303-208B**, 308-208A,B). Operating characteristics of highway, guided-ground, air, water-borne, and pipeline transport modes; land use/transportation interaction; travel demand analysis; transportation planning methodology; analysis of transportation alternatives; highway design; human factors and safety in highway transportation; location, planning, and design of airports.
Dr. McCoomb and Mr. Rebelo

303-321A FLUID MECHANICS 3(2-3-4). (Prerequisite: 303-206A,B**; Co-requisite: 189-264A,B). Fluid statics, kinematics of flow, conservation equations, control volume, dimensional analysis and similitude, ideal fluid flow theory, steady flow in pipes, boundary layers, hydraulic machinery.
Professor Savage

303-322B HYDRAULICS 3(2-3-4). (Prerequisite: 303-321A). Open channel transitions and controls, hydraulic structures, surface waves, free turbulent shear flows, hydraulic transients, water hammer, surge tanks.
Professor Chu

303-323A HYDROLOGY AND WATER RESOURCES 3(3-2-4). (Co-requisite: 303-202A). Precipitation, evaporation and transpiration. Streamflow, storage reservoirs. Groundwater hydrology. Morphology of river basins. Statistical analysis in hydrology, stochastic modelling and simulation. Case studies in hydroelectric power development, flood damage mitigation, irrigation and drainage.
Professor Cavadias

303-384A SOIL MECHANICS AND FOUNDATIONS 2(2-3-1). (Prerequisites: 303-283B* or 303-207A,B*). Nature of soils, identification and classification. Physical properties of soils, permeability, compressibility, shear strength, principle of effective stresses, stress strain behaviour. Seepage, frost action. Field exploration of soil conditions. Foundations, shallow and deep. Earth pressures and retaining structures, stability of earth masses.
Drs. Sethi and Boonsinsuk

303-385A STRUCTURAL STEEL DESIGN 2(2-2-2). (Prerequisite: 303-283B; Co-requisite: 303-289A). A study of the characteristics of struc-

tural steel frames in building construction. Included is the detailed design of axially loaded members, trusses, beams and girders, and the overall framing of buildings. Also a consideration of structural loads, code requirements and design procedures. In addition the principles of structural timber design are studied.
Professor Turkstra

303-388B REINFORCED CONCRETE DESIGN 2(2-2-2) (Prerequisite: 303-283B). Physical properties of concrete; behaviour and design of reinforced concrete members in compression, tension, bending, shear and combined loadings; bond and anchorage; reinforced concrete slabs and precast concrete elements; structural framing systems.
Professor Turkstra

◎ **303-416B TRANSPORTATION ECONOMICS 2(2-1-3).** (Prerequisites: 303-202A*, 303-208B*). Transportation issues are examined in the light of economic theory. Topics include the determinants of travel demand; cost concepts and their application; pricing to achieve equilibrium between demand, costs, capacity and level of service; regulation and other policy options; cost-benefit analysis. Case studies and a project are used to apply concepts to current Canadian transport issues.
Mr. Frayne

303-417A FOUNDATIONS 3(3-1-5). (Prerequisite: 303-312B*). Site investigation, engineering properties of soils for design. Plastic equilibrium, bearing capacity theory. Design of footing and rafts, differential settlement, coefficient of subgrade reaction. Earth pressures, design of retaining walls and bulk heads. Piles, soil-structure interaction, estimates of the bearing capacity of single piles, group action.
Professor Osler

303-418A,B PROJECT 3(0-4-5). (Prerequisite: Completion of an approved set of required and technical elective courses.) The project consists of a study or design topic in any of the branches of Civil Engineering. The project may be analytical or experimental, and may combine various branches in the discipline. The topic can be chosen in consultation with a staff member, whose approval is necessary. Guidance will be provided by Department staff and by practising engineers. The project is carried out in a student's last semester.
Professors Shrivastava, Turkstra, and Staff

◎ **303-430A SANITARY ENGINEERING 3(3-2-4).** (Prerequisite: 303-310B; Co-requisite: 303-323A*). Principles of water and sewage treatment. Population forecasting and flow quantities; water and sewage characteristics; design of conventional unit operations and processes.
Professor Gehr

◎ **303-431B STREAM POLLUTION AND CONTROL 3(3-0-6).** (Prerequisite: 303-310A). Sources and types of pollution; effects of pollution; thermal pollution; oil pollution; pollution from farmland; eutrophication; stream self-purification; pollution surveys and water quality standards.
Professor Spraggs

◎ **303-433B URBAN PLANNING 2(2-2-2).** (Prerequisite: 308-208A,B*). City in history; master plans of land use and communications; traffic and transportation systems; planning and design of residential subdivisions.
Mrs. Suen

◎ **303-439B PHOTOGRAMMETRY AND INTERPRETATION 3(3-3-3).** (Prerequisite: 303-209B). Construction of planimetric and topographic maps, determination of space position of objects from photographs; preparation of composite pictures of the ground; aerial cameras and equipment. Vertical aerial photographs are used to evaluate, analyse, classify and interpret images of objects seen on the photographs; laboratory use of stereoscopes and a Multiplex projector, and field visits, are included.
Professor Arcand and Mr. Rivard

◎ **303-440A TRAFFIC ENGINEERING 3(3-2-4).** (Prerequisite: 303-319B*). Driver, vehicle and traffic flow characteristics; origin-destination studies, traffic studies and analysis, accident studies, queueing theory applications, gap acceptance, simulation, highway capacity, traffic regulations and control measures, intersection control.
Mr. Whitehead

◎ **303-445A CONSTRUCTION PROJECT MANAGEMENT 3(3-2-4).** (Prerequisite: open to U3 Engineering students). Planning, operation, and control construction projects using systems analysis methods, economics, modern management techniques, and statistical analysis; linear graph modeling, PERT, precedence networks; scheduling of operations manpower, and equipment, resource levelling; progress monitoring and reporting; the rate of work method; time-cost trade-offs; cost estimation; evaluation of contract bidding; risk analysis; methods improvement in construction management.
Professor Spraggs

◎ **303-450A SOIL BEHAVIOUR 3(3-0-6).** (Prerequisite: 303-312B). Soil-water interaction in relation to soil properties, environmental considerations, volume changes, infiltration and diffusion. Soil freezing, soil strength parameters, time-deformation characteristics, stability and yield.
Professor Yong

◎ **303-451B HIGHWAY AND AIRPORT DESIGN 2(2-2-2).** (Prerequisite: 303-312B*). Design and construction of subgrades; fill selection, compaction, compaction control, soil stabilization, frost action. Stability of cuts and embankments. Design of rigid and flexible pavements and bases, stresses in layered systems, evaluation of design parameters, current methods of design, evaluation and strengthening of existing pavements.
Professor Osler

◎ **303-460A STRUCTURAL ANALYSIS II 3(3-2-4).** (Prerequisites: 303-206A,B*, 303-313A). Computer structural analysis, direct stiffness applied to two and three dimensional frames and trusses, matrix force method, nonlinear problems, cables and arches, approximate analyses, energy methods, buckling of trusses and frames, dynamic analysis of frames.
Professor Mirza

◎ **303-462B DESIGN OF STEEL STRUCTURES 3(3-3-3).** (Prerequisites: 303-313A, 303-314A, 303-315B). A study of structural systems; recent developments and trends in structural steel design. Floor systems, composite construction. Connections. Design of braced frames; moment resisting frames; plate girders.
Professor Redwood

◎ **303-463A DESIGN OF CONCRETE STRUCTURES 3(3-3-3)** (Prerequisites: 303-313A, 303-315B). Design of columns under biaxial bending, length effects in column design, two-way slabs, flat-slabs, combined footings, shear walls, retaining walls, composite construction. Floor and building framing systems. Design projects.
Professor Harris

◎ **303-470A,B RESEARCH PROJECT 3(0-1-8).** (Prerequisite: 60 credits in the Civil Engineering and Applied Mechanics program). This course is open only to those students with a high cumulative grade point average. A research project must be carried out and a technical paper prepared under the supervision of a member of staff. The nature of the project must be established with the consent of the Staff Supervisor, and must be approved by the Department before registration. This course may be taken in conjunction with the required course 303-418B, and the project therefore can be carried out through two semesters.
Professors Shrivastava, Turkstra and Staff

303-492A STRUCTURES 2(2-2-2). (Prerequisites: 303-385A, 303-388B). A study of structural systems in concrete, steel, timber; a philosophy of structure; choice of structure; economic factors in design; recent developments and trends in structure; lateral stability by frame action, bracing shear walls; mechanics of certain structural forms.
Professor Selby

◎ **303-514B STRUCTURAL MECHANICS 3(3-2-4).** (Prerequisite: 303-207A,B). Transformation of stress and strain in three dimensions, basic equations of elasticity, stress concentrations, theories of failure, unsymmetrical bending of beams, shear centres, torsion of structural sections, elementary analysis of plates and shells.
Professor Harris

◎ **303-540A URBAN TRANSPORTATION PLANNING 3(3-0-6).** Urban travel demand characteristics; transportation goals and objectives; planning, design and co-ordination of street systems, mass transit networks, and parking facilities; economic and environmental issues; urban goods movement; development and evaluation of transport alternatives.
Dr. McCoomb

◎ **303-546A,B SELECTED TOPICS IN CIVIL ENGINEERING 3(3-0-6).** Special topics related to Civil Engineering will be presented by staff and visiting lecturers.

◎ **303-571B HYDRAULIC MACHINES 3(3-0-6).** (Prerequisites: 303-321A and 303-323A). Types of pump, performance data and operation of centrifugal pumps, design of pump intakes. Types of turbine, similitude, cavitation, sizing of power stations. Pump-turbines, transients, pressure rise, overspeed. Frequency control of hydraulic turbines.
Dr. Ransford

◎ **303-573A HYDRAULIC STRUCTURES 3(3-0-6).** (Prerequisites: 303-322B and 303-323A). Hydraulic aspects of the theory and design of hydraulic structures. Storage dams, spillways, outlet works, gates and valves, diversion works, drop structures, conveyance and control structures.
Mr. Murray

◎ **303-577B SEDIMENT TRANSPORT 3(3-0-6).** (Corequisite: 303-322B). Mechanics of the entrainment, transportation and deposition of solids by fluids. Sediment properties; threshold of movement; ripples, dunes and antidunes; suspended load; bed load; stable channel design; meandering of rivers; wave-induced transport; turbidity currents; transport of solids in pipelines; aeolian transport.
Professor Savage

PROGRAMS IN CIVIL ENGINEERING

Considerable freedom exists for students to influence the nature of the program of study which they follow in the Department of Civil Engineering and Applied Mechanics. A variety of advanced elective courses are offered in three main groupings: Geotechnical Engineering, Structural Engineering, and a broad area which may be called Environmental Systems. The last of these is wide in scope, and embraces studies in water resources engineering, environmental and municipal engineering, hydraulics, transportation, photogrammetry and air photograph interpretation and pollution studies.

In order to complete a program in the minimum time, the need to satisfy prerequisites limits the choice of courses in the first and second semesters. September entrants into UI are advised to register in the following courses in the first semester:

189-261A	Differential Equations I
189-263A	Advanced Calculus
303-203A	Technical Reporting
303-205A	Statics
305-290A	Graphics
308-208A	Computers in Engineering

Students who enter with high marks in mathematics and physics may be permitted to take an additional

course. It is recommended that this should be 186-221A General Geology.

In the second semester, the following courses are advised:

189-262B	Diff. Eqns. II and Lin. Algebra
303-201B	Structural Materials
303-204B	Surveying Field School
303-206B	Dynamics
303-207B	Solid Mechanics
303-208B	Deterministic Systems
303-209B	Surveying

January entrants into UI are advised to register in the following courses in the first semester:

189-261B	Differential Equations I
189-263B	Advanced Calculus
303-204B	Surveying Field School
303-205B	Statics
303-209B	Surveying
308-208B	Computers in Engineering

Students who enter with high marks in mathematics and physics may be permitted to take an additional course. It is recommended that this should be either 303-201B Structural Materials or 305-290B Graphics.

In the second semester, the following courses are advised:

186-221A	General Geology
189-262A	Diff. Eqns. II and Lin. Algebra
303-203A	Technical Reporting
303-206A	Dynamics
303-207A	Solid Mechanics
305-290A	Graphics

Students wishing to take lighter loads than those outlined above should consult their adviser.

Courses taken in Semester 3 or later are very much dependent upon a student's interests and ability. Information and advice concerning different possibilities are made available in the department prior to registration. All programs require the approval of a staff adviser. Programs for students transferring into the department with advanced standing will be dependent upon the academic credit previously achieved, and such a program will be established only after consultation with a staff adviser.

The humanities, social sciences and administrative studies elective requirement of nine credits must be satisfied by taking courses from an approved list which will be available at registration. These courses must be taken in the U2 and U3 years.

Technical Elective courses must amount to 12 out of a total of 105 credits, and most of these electives should be selected from those offered by the department. In exceptional cases, and with the Chairman's approval, 600 level graduate courses may be taken as electives. Permission may be granted for a student to take a coherent group of elective courses from outside of the department, subject to the overall requirement that the emphasis of these elective courses is compatible with the professional orientation of a civil engineer. Such a grouping of courses is the Minor in Management, which is particularly relevant to students interested in careers in construction or business management.

Three credits of the technical elective requirements will be considered as satisfied by completion of the courses of the Minor in Management, listed in Section 6 of this Announcement. Civil Engineering students are also exempt from course 280-373A,B Operations Research, because of their required courses 303-202A and 303-208B. With six credits of administrative studies also taken as part of this Minor, this normally means that a minimum of 108 credits are required for the B.Eng. degree in Civil Engineering and Applied Mechanics with the Minor in Management. Further information on the Minor in Management as well as the Minor in Computer Science, may be found in Section 6.

5.5 DEPARTMENT OF ELECTRICAL ENGINEERING

Chairman
P.R. Bélanger, S.M., Ph.D. (M.I.T.), Eng.

Professors
E.L. Adler, M.A.Sc.(Tor.), Ph.D. (McG.), Eng.
M.L. Blostein, M.Eng.(McG.), Ph.D.(Ill.), Eng.
G.W. Farnell, S.M.(M.I.T.), Ph.D.(McG.), F.I.E.E.E., Eng.
M.D. Levine, M. Eng. (McG.), Ph.D. (Lond.), Eng.
T.J.F. Pavlasek, B.Eng., M.Eng., Ph.D.(McG.), Eng.
N. Rumin, M.Sc., Ph.D. (McG.), Eng.
P. Silvester, M.A.Sc. (Tor.), Ph.D. (McG.), Eng.
G.L. Yip, M.Sc.(Qu.), Ph.D.(Tor.)
G.D. Zames, B.Eng.(McG.), Sc.D.(M.I.T.)

Associate Professors
P.E. Caines, B.A.(Oxon.), D.I.C., Ph.D.(Lond.)
C.H. Champness, M.Sc.(Lond.), Ph.D.(McG.)
Z.J. Csendes, M.Eng., Ph.D. (McG.)
M. Fukada, M.S.E.E.(Tokyo), Ph.D.(Calif.)
F.D. Galiana, S.M., Ph.D.(M.I.T.)
A.A. Gundjian, B.Sc.(Alexandria), Ph.D.(Penn.)
J.F. Hayes, M.S. (N.Y.U.), Ph.D.(Calif.)
D.A. Lowther, B.Sc. (Lond.), Ph.D. (Brighton Poly.)
A.S. Malowany, B.Eng., Ph.D.(McG.), Eng.
B.T. Ooi, S.M.(M.I.T.), Ph.D. (McG.)
S. Zucker, M.S., Ph.D.(Drex.)

Assistant Professors
V.K. Agarwal, M.S. (Pitt.), Ph.D. (Johns Hopkins)
P. Kabal, M.A.Sc., Ph.D.(Tor.)
H.C. Lee, B.Sc.(Man.), Ph.D.(McG.)

Lecturer
K.L. Fraser, M.Eng.(McG.), Eng.

Associate Member
J.S. Outerbridge, Ph.D., M.D.C.M. (McG.)

Auxiliary Professors
D. Benn, J. Bowles, C.W. Bradley, P. Bura, D. Crevier, M. Gavrilovic, B. Gevay, B. Guertin, M. Kaplan, E. Kisak, S. Kubina, M.A. Marin, R. Murphy, H.L. Nakra, D. O'Shaughnessy, G. Petrillo, F.M. Reza, A.B. Sturton, A. Turgeon, V. Zajic

Looking back from the year 2000, historians of electrical engineering will probably consider the twentieth century to be divisible into three equal periods. The first period witnessed a rapid and exciting growth in the sophistication of electromechanical devices, while the second was marked by a startling growth in electronic communications. It is probably safe to forecast that the present era will be the age of digital computer systems and computer communications.

Since a digital computer is essentially a large-scale electronic system, it is quite natural for the growing importance of the computer to be reflected in the ever evolving curriculum of the Department of Electrical Engineering. Thus a substantial portion of the Department's activity centres on the electronic devices and circuits which form the building blocks of electronic computers. An equally great amount of effort is devoted to the structure and organization of computers. The physical make-up of computers, however, forms only a portion of the broader picture. An important part of the electrical engineer's work has always been, and probably always will be, the design of electrical devices and systems. Computer-aided design thus falls well within the province of the electrical engineer. So do problems of man-machine and computer-computer communications, since the effective use of electronic communication technologies as well as the efficient distribution of electrical energy require rapid movement and processing of data. At the same time, microcomputers are being incorporated as functional sub-units into virtually every conceivable variety of electrical system.

While the Department recognizes the importance of the computer revolution, it has not neglected in its program such important areas as communications, control systems, electromagnetic propagation, electro-optical systems, power engineering, and electron devices and circuits.

The Department currently offers a regular program and an honours program leading to the professionally accredited degrees of, respectively, B.Eng. and B.Eng. (Honours). A Computer Engineering Option is available as a variation of these programs. Suitably qualified and motivated students can complete either program in six semesters (three years) of post-collegial studies. Both programs provide the student with a strong background in mathematics, networks, electronics, computer engineering, electromagnetics, engineering economy and writing skills. These provide the fundamental tools for further studies. Because of the diversity of the field it is not possible to become expert in everything, but it is considered important for the student to obtain an exposure to a diverse subset of the important areas. An engineering graduate should have basis elements of subjects covering all of electrical engineering and be able to function in any one of our client industries, albeit with some specialized training. This breadth is what distinguishes an engineer from, say, a computer scientist or a physicist. In order to promote this breadth, the student is required to take a selected set of courses. Finally, there is a large group of technical electives which allow considerable freedom to specialize in specific areas, or to obtain a broad perspective of the field. Six major areas of specialization are defined: Communication Systems; Computer Engineering; Control Systems; Electromagnetics and Waves; Solid State Devices and Electronics; Power Engineering.

In addition to technical elective requirements, the student must also satisfy a general elective requirement by taking additional courses from the Humanities, Social Sciences and Administrative Studies. The Faculty offers course packages that study a certain field in sufficient depth to be called a minor.

With judicious use of electives and the occasional additional course, a student can take a faculty minor.

The Honours curriculum is designed to produce a stronger background in the mathematical and physical bases of electrical engineering with the goal of an in-depth study of certain areas of the field. As a result, the required courses stress a more fundamental and analytical approach to the subject matter. The technical electives must be chosen to provide coherent study of certain well-defined areas and should serve as a basis for future study either in graduate school or industry. Students in this curriculum normally benefit from smaller classes and more personal attention on the part of the staff.

Laboratories for both teaching and research work are good, and growing. Because much of the Department's teaching is organized on a project basis, it is occasionally difficult to draw a clear line between graduate and undergraduate activities. In the laboratories, investigative work is often carried out by advanced undergraduate students as well as graduates; in the classroom, graduate and undergraduate courses frequently overlap.

The Department's computational facilities are distributed across several laboratories, as well as the University Computing Center. There are laboratories specifically for digital electronics, for interactive computing, and for microcomputers, that are primarily used by undergraduates. Graduate research in computers is centered around the Computer Vision and Graphics Laboratory and the Laboratory for Computational Analysis and Design, which are based on a DEC VAX 11/780 and on DEC PDP 11's respectively. In total, there are about 25 different computers in the Department.

In addition, the new Louis Herdt coherent optics laboratory, semiconductor devices laboratory, acoustics laboratory, power laboratory and various others provide challenging opportunities for project work as well as research.

In recent years, an advanced degree has become increasingly necessary for electrical engineers interested in pursuing technically oriented careers. More than one-third of McGill Electrical Engineering graduates currently continue to a Master's degree or beyond. While the computer-oriented bias evident in the undergraduate program is also reflected in graduate course offerings, project and thesis work is usually planned on a highly individual basis and hence covers a very broad spectrum.

CURRICULUM FOR THE B.ENG. DEGREE IN ELECTRICAL ENGINEERING (REGULAR)

REQUIRED COURSES		COURSE CREDIT	
Non-Departmental Subjects (36 credits)			
189-261A,B	Differential Equations I	3	
189-262A,B	Differential Equations II and Linear Algebra	3	
189-263A,B	Advanced Calculus	3	
189-264A,B	Introduction to Boundary Value Problems	3	
189-381A	Functions of a Complex Variable	3	
198-244B	Waves	3	
198-321A	Modern Physics	3	
198-323A	Electrical Engineering Thermodynamics	3	
306-310A,B	Engineering Economy	3	
303-281A	Analytical Mechanics	3	
308-350A,B	Numerical Analysis	3	
430-201A,B	Effective Written Communication	3	36
Electrical Engineering Subjects (30 credits)			
304-201A,B	Circuits and Electronics I	3	
304-221A,B	Introduction to Computers	3	
304-231A,B	Circuits and Electronics II	3	
304-303A	Signals and Systems	3	
304-305B	Random Signals and Noise	3	
304-322B	Digital System Design	3	
304-331B	Electronic Devices	3	
304-351A	Electromagnetic Fields	3	
304-352B	Electromagnetic Waves and Optics	3	
304-361B	Electromechanical Energy Conversion I	3	30
Electrical Engineering Laboratory Subjects (15 credits)			
304-291A,B	Electrical Laboratory I	3	
Twelve (12) additional credits, including at least 3 credits at the 400 level, chosen from the following list:			
304-391A,B	Digital Electronics Laboratory	3	
304-393A,B	Electronic Circuits and Systems Laboratory	3	
304-395A,B	High Frequency Laboratory I	3	
304-396A,B	Power Laboratory I	3	
304-491A,B	Communications Laboratory/Design Project	3	
304-492A,B	Digital Systems Design Project	3	
304-494A,B	Electrical Engineering Design Project	3	
304-495A,B	High Frequency Design Project Laboratory	3	
304-496A,B	Power Laboratory Project	3	
304-497A,B	Solid State Laboratory Project	3	15
ELECTIVE COURSES			
Technical Electives (15 credits)			
Fifteen (15) credits chosen from the 300 or higher level courses given by the department. Laboratory course credits beyond the required 15 may also be used. Subject to departmental approval up to six (6) credits at the 300 level or higher may be taken from outside the department.			15
General Electives (6 credits)			
Six credits selected in accordance with departmental regulations from the Humanities, Social Sciences or Administrative Studies.			6
Total number of credits			**102**

SAMPLE PROGRAM OF STUDIES FOR B.ENG. (REGULAR)

Good students starting their B.Eng. (Regular) in September may complete their program in six semesters as shown below:

	Semester 1 (Fall)			Semester 2 (Winter)	
189-261A	Diff. Eq. I	3	189-262B	Diff. Eq. II and Lin. Alg.	3
189-263A	Advanced Calculus	3	189-264B	Bdry. Value Problems	3
303-281A	Analytical Mechanics	3	198-244B	Waves	3
304-201A	Circuits and Elec. I	3	304-231B	Circuits and Elec. II	3
304-221A	Intro. to Computers	3	304-291B	Lab I*	3
		15			15
	Semester 3 (Fall)			**Semester 4 (Winter)**	
189-381A	Func. of Complex Var.	3	304-325B	Electromagnetic Waves	3
198-321A	Modern Physics	3	304-305B	Random Signals	3
198-323A	Elec. Eng. Thermodyn.	3	304-331B	Electronic Devices	3
304-303A	Signals And Syst.	3	304-361B	Electromechanical E.C.	3
304-351A	Electromagnetic Fields	3	304-322B	Dig. Syst. Design**	3
	300-level Lab	3		300-level Lab	3
		18			18
	Semester 5 (Fall)			**Semester 6 (Winter)**	
430-201A	Effec. Written Comm.	3	306-310B	Engineering Economy	3
308-350A	Numerical Analysis	3		400-level Lab	3
	400-level Lab	3		Technical Electives	9
	Technical Electives	6		General Elective	3
	General Elective	3			18
		18			

* Some labs will be also offered during the Summer session.
** Course 304-322 can also be taken in Semester 2.

CURRICULUM FOR THE B.ENG. DEGREE IN ELECTRICAL ENGINEERING (REGULAR PROGRAM – COMPUTER ENGINEERING OPTION)

REQUIRED COURSES		COURSE CREDIT	
Non-Departmental Subjects (36 credits)			
189-261A,B	Differential Equations I	3	
189-262A,B	Differential Equations II and Linear Algebra	3	
189-263A,B	Advanced Calculus	3	
189-264A,B	Introduction to Boundary Value Problems	3	
189-343A	Discrete Mathematics	3	
189-381A	Functions of a Complex Variable	3	
198-244B	Waves	3	
198-321A	Modern Physics	3	
198-323A	Electrical Engineering Thermodynamics	3	
306-310A,B	Engineering Economy	3	
303-281A	Analytical Mechanics	3	
430-201A,B	Effective Written Communication	3	36
School of Computer Science Subjects (9 credits)			
308-315A	Information Structures	3	
308-350A,B	Numerical Analysis	3	
308-405B	Algorithms and Their Analysis	3	9
Electrical Engineering Subjects (30 credits)			
304-201A,B	Circuits and Electronics I	3	
304-221A,B	Introduction to Computers	3	
304-231A,B	Circuits and Electronics II	3	
304-303A	Signals and Systems	3	
304-305B	Random Signals and Noise	3	
304-322B	Digital Systems Design	3	
304-331B	Electronic Devices	3	
304-351A	Electromagnetic Fields	3	
304-424A	Small Computer Systems	3	
304-425B	Computer Organization and Architecture	3	30
Electrical Engineering Laboratory Subjects (15 credits)			
304-291A,B	Electrical Laboratory I	3	
304-391A,B	Digital Electronics Laboratory	3	
304-492A,B	Digital Systems Design Project	3	
At least six (6) additional credits of laborarory chosen from the following list:			
304-393A,B	Electronic Circuits and Systems Laboratory	3	
304-395A,B	High Frequency Laboratory I	3	
304-396A,B	Power Laboratory I	3	
304-491A,B	Communications Laboratory/Design Project	3	
304-494A,B	Electrical Engineering Design Project	3	
304-495A,B	High Frequency Design Project Laboratory	3	
304-496A,B	Power Laboratory Project	3	
304-497A,B	Solid State Laboratory Project	3	15
ELECTIVE COURSES			
Technical Electives (6 credits)			
Six (6) credits chosen from 300 or higher level courses offered by the department. Laboratory course credits beyond the required 15 may also be used. Subject to departmental approval up to six credits at the 300 level or higher may be taken from outside the department.			6
General Electives (6 credits)			
Six credits selected in accordance with departmental regulations from the Humanities, Social Sciences or Administrative Studies.			6
Total number of credits			**102**

SAMPLE PROGRAM OF STUDIES FOR B.ENG. (REGULAR PROGRAM – COMPUTER ENGINEERING OPTION)

Good students starting their B.Eng. (Regular program – Computer Engineering Option) in September may complete their program in six semesters as shown below:

	Semester 1 (Fall)			**Semester 2 (Winter)**	
189-261A	Diff. Eq. I	3	189-262B	Diff. Equ. II and Lin. Alg.	3
189-263A	Advanced Calculus	3	189-264B	Bdry. Value Problems	3
303-281A	Analytical Mechanics	3	198-244B	Waves	3
304-201A	Circuits and Elec. I	3	304-231B	Circuits and Elec. II	3
304-221A	Intro. to Computers	3	304-291B	Lab I*	3
		15	304-322B	Digital Sys. Design	3
					18
	Semester 3 (Fall)			**Semester 4 (Winter)**	
189-343A	Discrete Math.	3	308-350B	Numerical Analysis	3
189-381A	Func. of Complex Var.	3	304-305B	Random Signals	3
198-321A	Modern Physics	3	304-425B	Compt. Org. and Arch.	3
304-303A	Signals and Syst.	3	304-331B	Electronic Devices	3
304-424A	Small Computers	3	304-391B	Digital Electronics Lab	3
	300-level Lab	3		Technical Elective	3
		18			18
	Semester 5 (Fall)			**Semester 6 (Winter)**	
198-323A	Elect. Eng. Thermodyn.	3	306-310B	Engineering Economy	3
304-351A	Electromagnetic Fields	3	308-405B	Algorithms	3
304-492A	Digit. Syst. Design Lab	3		400-level Lab	3
430-201A	Effec. Written Comm.	3		Technical Elective	3
308-315A	Inform. Structures	3		General Elective	3
	General Elective	3			15
		18			

* Some labs will also be offered during the Summer session.

CURRICULUM FOR THE B.ENG. DEGREE IN ELECTRICAL ENGINEERING (HONOURS)

REQUIRED COURSES		COURSE CREDIT	
Non-Departmental Subjects (36 credits)			
189-261A,B	Differential Equations I	3	
189-263A,B	Advanced Calculus	3	
189-267B	Differential Equations II and Linear Algebra	3	
189-269B	Introduction to Boundary Value Problems	3	
189-384B	Probability	3	
189-385A	Complex Variables	3	
198-271B	Quantum Physics	3	
198-274B	Waves	3	
306-310A,B	Engineering Economy	3	
303-281A	Analytical Mechanics	3	
308-350A,B	Numerical Analysis	3	
430-201A,B	Effective Written Communication	3	36
Electrical Engineering Subjects (30 credits)			
304-201A,B	Circuits and Electronics I	3	
304-221A,B	Introduction to Computers	3	
304-231A,B	Circuits and Electronics II	3	
304-308A	Signals and Systems	3	
304-322B	Digital System Design	3	
304-331B	Electronic Devices	3	
304-356A	Electromagnetic Fields	3	
304-357B	Electromagnetic Waves and Optics	3	
304-366B	Electromechanical Energy Conversion I	3	
304-376A	Thermal Physics	3	30
Electrical Engineering Laboratory Subjects (15 credits)			
304-291A,B	Electrical Laboratory I	3	
Twelve (12) additional credits, including at least 3 credits at the 400 level, chosen from the following list:			
304-391A,B	Digital Electronics Laboratory	3	
304-393A,B	Electronic Circuits and Systems Laboratory	3	
304-395A,B	High Frequency Laboratory I	3	
304-396A,B	Power Laboratory I	3	
304-491A,B	Communications Laboratory/Design Project	3	
304-492A,B	Digital Systems Design Project	3	
304-494A,B	Electrical Engineering Design Project	3	
304-495A,B	High Frequency Design Project Laboratory	3	
304-496A,B	Power Laboratory Project	3	
304-497A,B	Solid State Laboratory Project	3	
304-498D	Thesis	6	15
ELECTIVE COURSES			
Technical Electives (15 credits)			
Fifteen (15) credits must be selected from graduate and undergraduate courses with at least nine (9) credits of 500 or 600 level courses in Electrical Engineering. Subject to departmental approval up to six credits at the 300 level or higher may be taken from outside the department. Laboratory course credits beyond the required 15 may also be used.			15
General Electives (6 credits)			
Six (6) credits selected in accordance with departmental regulations from the Humanities, Social Sciences or Administrative Studies.			6
Total number of credits			**102**

SAMPLE PROGRAM OF STUDIES FOR B.ENG (HONOURS)

A typical six semester program leading to the B.Eng. (Honours) is given below. Entry into the Honours program is based on the results of the first semester examinations.

	Semester 1 (Fall)			Semester 2 (Winter)	
189-261A	Diff. Eq. I	3	189-267B	Diff. Eq. II and Lin. Alg.	3
189-263A	Advanced Calculus	3	189-269B	Bdry. Value Problems	3
303-281A	Analytical Mechanics	3	198-274B	Waves	3
304-201A	Circuits and Elec. I	3	198-271B	Quantum Physics	3
304-221A	Intro. to Computers	3	304-231B	Circuits and Elec. I	3
		15	304-291B	Lab I*	3
					18

	Semester 3 (Fall)			Semester 4 (Winter)	
189-385A	Complex Variables	3	189-384B	Probability	3
304-376A	Thermal Physics	3	304-357B	Electromagnetic Waves	3
304-308A	Signals and Systems	3	304-331B	Electronic Devices	3
304-356A	Electromagnetic Fields	3	304-366B	Electromechanical E.C.	3
308-350A	Numerical Analysis	3	304-322B	Digital Syst. Design	3
	300-level Lab	3		300-level Lab	3
		18			18

	Semester 5 (Fall)			Semester 6 (Winter)	
430-201A	Effec. Written Comm.	3	306-310B	Engineering Economy	3
	400-level Lab	3		400-level Lab	3
	Technical Electives	9		Technical Electives	6
	General Elective	3		General Elective	3
		18			15

* Some labs will also be offered during the Summer session.

CURRICULUM FOR THE B.ENG DEGREE IN ELECTRICAL ENGINEERING (HONOURS PROGRAM – COMPUTER ENGINEERING OPTION)

REQUIRED COURSES		COURSE CREDIT	
Non-Departmental Subjects (36 credits)			
189-261A,B	Differential Equations I	3	
189-263A,B	Advanced Calculus	3	
189-267B	Differential Equations II and Linear Algebra	3	
189-269B	Introduction to Boundary Value Problems	3	
189-343A	Discrete Mathematics	3	
189-384B	Probability	3	
189-385A	Complex Variables	3	
198-271B	Quantum Physics	3	
198-274B	Waves	3	
306-310A,B	Engineering Economy	3	
303-281A	Analytical Mechanics	3	
430-201A,B	Effective Written Communication	3	36
School of Computer Science Subjects (9 credits)			
308-315A	Information Structures	3	
308-350A,B	Numerical Analysis	3	
308-405B	Algorithms and their Analysis	3	9
Electrical Engineering Subjects (30 credits)			
304-201A,B	Circuits and Electronics I	3	
304-221A,B	Introduction to Computers	3	
304-231A,B	Circuits and Electronics II	3	
304-308A	Signals and Systems	3	
304-322B	Digital System Design	3	
304-331B	Electronic Devices	3	
304-356A	Electromagnetic Fields	3	
304-376A	Thermal Physics	3	
304-424A	Small Computer Systems	3	
304-425B	Computer Organization and Architecture	3	
Electrical Engineering Laboratory Subjects (15 credits)			
304-291A,B	Electrical Laboratory I	3	
304-391A,B	Digital Electronics Laboratory	3	
304-492A,B	Digital Systems Design Project	3	
At least six (6) credits of additional laboratory subjects taken from the following list:			
304-393A,B	Electronic Circuits and Systems	3	
304-395A,B	High Frequency Laboratory I	3	
304-396A,B	Power Laboratory I	3	
304-491A,B	Communications Laboratory/Design Project	3	
304-494A,B	Electrical Engineering Design Project	3	
304-495A,B	High Frequency Design Project Laboratory	3	
304-496A,B	Power Laboratory Project	3	
304-497A,B	Solid State Laboratory Project	3	
304-498D	Thesis	6	15
ELECTIVE COURSES			
Technical Electives (9 credits)			
At least nine (9) credits from 500 or 600 level courses. Up to 6 of these credits may be taken from outside the department subject to departmental approval.			9
General Electives (6 credits)			
Six (6) credits selected in accordance with departmental regulations from the Humanities, Social Sciences or Administrative Studies.			6
Total number of credits			**105**

SAMPLE PROGRAM OF STUDIES FOR B.ENG. (HONOURS – COMPUTER ENGINEERING OPTION)

A typical six semester program leading to a B.Eng. (Honours – Computer Engineering Option) is given below. Entry into the Honours program is based on the results of the first semester examinations.

	Semester 1 (Fall)			Semester 2 (Winter)		
189-261A	Diff. Eq. I	3	189-267B	Diff. Eq. II and Lin. Alg.	3
189-263A	Advanced Calculus	3	189-269B	Bdry. Value Problems	3
303-281A	Analytical Mechanics	3	198-274B	Waves	3
304-201A	Circuits and Elec. I	3	304-231B	Circuits and Elec. II	3
304-221A	Intro. to Comp.	3	304-322B	Digital Syst. Design	3
		15	304-291B	Lab I*	3
					18
	Semester 3 (Fall)			**Semester 4 (Winter)**	
189-385A	Complex Variables	3	189-384B	Probability	3
189-343A	Discrete Math	3	198-271B	Quantum Physics	3
304-424A	Small Computers	3	304-425B	Comp. Org. and Arch.	3
304-308A	Signals and Systems	3	304-331B	Electronic Devices	3
304-391A	Dig. Elec. Lab	3	308-350B	Numerical Analysis	3
430-201A	Effec. Written Comm.	3	304-492B	Dig. Syst. Lab	3
		18			18
	Semester 5 (Fall)			**Semester 6 (Winter)**	
304-376A	Thermal Physics	3	308-405B	Algorithms	3
304-356A	Electromagnetic Fields	3	306-310B	Engineering Economy	3
308-315A	Inform. Struct.	3		General Elective	3
	300- or 400-level Lab	3		300- or 400-level Lab	3
	General Elective	3		Technical Electives	6
	Technical Elective	3			18
		18			

* Some Labs will also be offered during the Summer session.

CONCENTRATIONS IN ELECTRICAL ENGINEERING

Our course of study allows considerable flexibility. By an appropriate choice of courses the student can obtain concentrated study in computer engineering, power systems, electromagnetics and waves, electronic devices and integrated circuits, communications or control systems. Alternatively a student may mix courses from these areas to obtain a broad technological base in Electrical Engineering. Some suitable combinations of electives are listed below. These combinations are not exclusive, others can be planned with the assistance of the student's faculty adviser.

COMPUTER ENGINEERING

Computer engineering at McGill emphasizes the structure, design, and role of computers in modern systems. Modern communication, control, and power systems all have mini-computers deeply imbedded within them. In order to obtain the best system, the computer engineer needs a thorough understanding of both hardware and software. A combination of required courses and technical electives satisfies this aim.

Required Courses		**Credits**
304-221A,B	Introduction to Computers	3
304-322A,B	Digital System Design	3
308-350A,B	Numerical Analysis	3
Technical Electives (Electrical Engineering)		
304-424A	Small Computer Systems	3
304-425B	Computer Organization and Architecture	3
304-529A	Image Processing and Communication	3
304-531B	Real Time Systems	3
304-532A	Computer Graphics	3
304-533B	Computerized Text Processing	3
Other Electives		
189-417A	Mathematical Programming	3
280-373A	Operations Research I	3
308-300A,B	Programming Languages	3
308-310B	Computer Systems and Organization	3
308-315A	Information Structures	3
308-320B	Files and Data Bases	3

In addition to the above there are projects involving computing, digital system design, computer interfacing and applications in the required electrical laboratories.

COMMUNICATION SYSTEMS

Required Courses		
304-303A	Signals and Systems	3
304-305B	Random Signals and Noise	3
Technical Electives		
304-411A	Communication Systems	3
304-424A	Small Computer Systems	3
304-472B	Communications Technology	3
304-512A	Digital Signal Processing	3
304-521B	Digital Communications	3
304-522A	Statistical Communication Theory	3
304-523B	Speech Communications	3
304-529A	Image Processing and Communication	3
304-531B	Real Time Systems	3
304-593B	Antennas and Propagation	3

In addition to the above, courses describing some of the components used in communication systems are available. A strong background in antennas, microwaves, solid state electronics and computer structure is recommended. Finally the system ideas embodied in control system theory can be quite useful.

CONTROL SYSTEMS

Required Courses

304-303A	Signals and Systems	3
304-305B	Random Signals and Noise	3

Technical Electives

304-404B	Control Systems	3
304-424A	Small Computer Systems	3
304-464A	Power Systems Analysis I	3
304-501A	Systems I	3
304-502A	Systems II	3
304-503B	Systems III	3
304-512A	Digital Signal Processing	3
304-531B	Real Time Systems	3

To obtain sufficient breadth to design complex control systems, additional knowledge of computer structure, communications, electronics and mathematical programming is desirable.

POWER ENGINEERING

Required Course

304-361B	Electromechanical Energy Conversion I	3

Technical Electives

304-462B	Electromechanical Conversion II	3
304-463A	High Voltage Engineering	3
304-464A	Power Systems Analysis I	3
304-501A	Systems I	3
304-502A	Systems II	3
304-531B	Real Time Systems	3
304-560B	Power Systems Analysis II	3
304-562A	Continuum Electromechanics	3
304-565B	Inverter and Chopper Circuits	3

The above courses together with the power laboratories and relevant options from the systems, circuits, control, electromagnetics and computer areas form a strong foundation for power engineers.

ELECTROMAGNETICS AND WAVES

Technical Electives

304-471B	Acoustics	3
304-543B	Numerical Methods in Electromagnetics	3
304-562A	Continuum Electromechanics	3
304-573B	Microwave Devices and Circuits	3
304-575B	Optical and Magnetic Properties of Solids	3
304-592A	Microwave Theory and Techniques	3
304-593B	Antennas and Propagation	3
304-596B	Optical Waveguides	3

These courses along with the required electromagnetics courses serve as a basis for further work in electromagnetic phenomena and as an introduction to microwave devices for all electrical engineers.

ELECTRONIC DEVICES AND CIRCUITS

Required Courses

304-333B	Electronic Circuits	3
304-322B	Digital System Design	3
304-332B	Properties of Solids	3
304-303A	Signals and Systems	3
304-331B	Electronic Devices	3

Technical Electives

304-545A	Microelectronics Technology	3
304-474B	Electronic Design	3
304-572A	Laser Electronics	3
304-573B	Microwave Devices and Circuits	3
304-575B	Optical and Magnetic Properties of Solids	3
304-579A	Semiconductor Devices and Models	3
304-596B	Optical Waveguides	3

In addition to the above, the required courses give a firm basis in both the physics of electronic devices and linear and digital electronics. The required laboratories include extensive experimentation using modern integrated and discrete electronics components, a small scale integrated circuit fabrication laboratory and a laser communications and holography facility.

REGULATIONS CONCERNING GENERAL ELECTIVES

All Electrical Engineering students must take at least nine credits in the Humanities, Social Sciences or Administrative Studies. Three of these credits are satisfied by the required subject 430-201, Effective Written Communication. The remaining six credits are selected from the above areas in accordance with departmental regulations for general electives. A list of valid general electives will be provided by the department.

COURSES OFFERED BY THE DEPARTMENT

304-201A,B CIRCUITS AND ELECTRONICS I 3(3-1-5). Kirchhoff's voltage-current laws. Node and mesh equations. Equivalent networks. Thevenin and Norton equivalents. Step, pulse and impulse response to first order networks. Diodes, Op-Amps, Bipolar transistors, Field Effect Transistors-applications, terminal characteristics, biasing, large signal and small signal models.

304-221A,B INTRODUCTION TO COMPUTERS 3(3-1-5). Introduction to digital systems, information and arithmetic; elementary combinational and sequential logic; stored program control and simple machine language programs; introduction to assemblers and compilers. The student will also experience both simulations and the use of a small (PDP-8) computer. FORTRAN will be used for simulation and computational exercises.

304-231A,B CIRCUITS AND ELECTRONICS II 3(3-1-5). (Prerequisites: 304-201, 189-261). Combinatorial and sequential circuits. Switches, latches, flip-flops, registers and counters. System functions-response to e^{st} and to singularity functions. Sinusoidal steady state. Transistors at high frequencies. Transformers. Real and reactive power, power factor. Three-phase circuits. Load flow analysis. Power electronics-thyristors.

304-232A INTRODUCTION TO ELECTRO-ACOUSTICS I, 3(2-2-5). (Prerequisite: 189-112A). This course will give an overview of the fundamentals in electronic circuits and instrumentation for the specific area of electroacoustic devices. Introduction to DC circuits, magnetism, electromagnetism, AC circuits, semiconductor devices, transistors and ICs. The laboratory hours will serve to illustrate the lecture topics and to introduce the students to the use of electronic testing and measuring equipment, identification of electronic circuits and reading of simple circuit diagrams. Not open to electrical engineering students.

304-271B ELECTRIC POWER UTILIZATION 2(2-1-3) (Prerequisite: 189-261). This service course gives an overview of electric power apparatus and systems to engineering students not in the electrical engineering specialization.

304-281B ELECTRIC POWER 3(3-0-6). (Prerequisite: 189-261A, B). Electrical circuit theory; distribution of electric power, electrical power utilization, electrical machines, transformers, controlled rectifiers. Not open to electrical engineering students.

304-291A,B ELECTRICAL LABORATORY I 3(1-5-4). (Co-requisite: 304-231A,B). Principles and limitations of basic electrical and electronic instrumentation and measurement: Meters, oscilloscopes, bridges and impedance measurements, filters, diode and amplifier circuits, single and 3 phase power measurement and transformers, rotational speed and torque measurement.

304-302A NETWORK ANALYSIS 3(3-1-5). (Prerequisite: 304-201A, B. Co-requisite: 189-381A). Formulation of network equilibrium equations, transform solution techniques, network functions, two-port analysis, network theorems, pole-zero design techniques.

304-303A SIGNALS AND SYSTEMS 3(3-1-5). (Prerequisite: 304-231. Co-requisite: 189-381). Inputs, outputs, states. Linearity, time-invariance. Analysis of linear system in state form. Convolution and transfer functions. Signal space, orthogonal expansions, Fourier series. Fourier transforms and applications to modulation and sampling. Feedback, the Routh-Hurwitz criterion, the root locus and the Nyquist stability criterion.

304-305B RANDOM SIGNALS AND NOISE 3(3-0-6). (Prerequisite: 304-231A,B). Introduction to probability, engineering applications and heuristic basis, axioms and sets, conditional probability, independence; random variables, definitions, functions, moments, vector and scalar, characteristic functions; random processes, noise model, stationarity, ergodicity, correlation and power spectrum, spectrum measurements; response of linear systems to random inputs, cross spectral densities, narrow band noise; introduction to discrete time and space processes, Markov chains and elementary queues.

304-308A SIGNALS AND SYSTEMS 3(3-1-5). (Prerequisite: 304-231. Co-requisite 189-385). Honours section of 304-303; similar in content to 304-303 but taught in greater depth.

304-322B DIGITAL SYSTEM DESIGN 3(3-0-6). (Prerequisite: 304-221A,B). Information representation and manipulation, coding, logic functions, Boolean algebra, graphical and algorithmic methods of synthesis and minimization of combinational circuits, finite state machines, synthesis of synchronous sequential networks, asynchronous sequential logic.

304-331B, ELECTRONIC DEVICES 3(3-1-5). (Prerequisite: 304-231). Crystal structure and valence model of pure and doped semiconductor. Mobility and Electrical Conductivity. Unipolar transistors, JFET, FET, MOS, MOSFET. Bipolar Junction Transistor, BJT. Integrated Circuits-bipolar IC, MOS IC, CMOS, CCD, I^2L. Thyristors. Other electronic devices.

304-332B PROPERTIES OF SOLIDS 3(3-0-6). (Prerequisite: 198-321A). Statistical properties of materials. Electrons in metals and semiconductors, free electron theory of metals, energy bands. Conduction processes in semiconductors. Theory of the pn junction and bipolar transistor.

304-333B ELECTRONIC CIRCUITS 3(3-0-6). (Prerequisites: 304-231A,B, recommended 304-302. Co-requisite: 304-303A or 304-308A, 304-322B). Small-signal transistor amplifiers. Operational amplifiers. Resistive feedback and frequen-

cy compensation. Applications of operational amplifiers. Combinational logic circuits. Latches and flip-flops. Counters and registers. Applications of digital and analog integrated circuits.

304-339B INTRODUCTION TO ELECTRO-ACOUSTICS II, 3(2-2-5). (Prerequisite: 304-232A). Basic principles of operation and design of electroacoustical devices and systems. Transducers, amplifiers and attenuators, signal processing devices; magnetic tape sound recording — reproducing systems, disc recording — reproducing systems, sound motion picture recording — reproducing systems, digital sound recording and reproducing systems. The laboratory classes will demonstrate some of these devices as well as associated measuring, testing and analyzing equipment and techniques. Not open to electrical engineering students.

304-351A ELECTROMAGNETIC FIELDS 3(3-0-6). (Prerequisites: 304-201A,B*, 304-221A,B, 189-263A,B and 189-264A,B, or 189-269B). Electrostatics and electric potential; kinematics, electrodynamics and Maxwell's equations; magnetostatics and magnetic vector potential; energy and power; time-varying fields; applications to engineering problems.

304-352B ELECTROMAGNETIC WAVES AND OPTICS 3(3-0-6). (Prerequisites: 304-351A or 304-356A, 198-244B or 198-274B). Steady-state and transient analysis of wave propagation in uniformly distributed systems; energy and power transfer; models, scattering parameters and the Smith chart; measurements on distributed systems; dispersion, periodically distributed systems and the ω - β diagram.

304-356A ELECTROMAGNETIC FIELDS 3(3-0-6). (Prerequisites; 304-201-A,B, 304-221A,B, 189-263A,B and 189-264A,B, or 189-269B). Honours section of 304-351; similar in content to 304-351 but taught in greater depth.

304-357B ELECTROMAGNETIC WAVES AND OPTICS 3(3-0-6). (Prerequisites: 304-356A, 198-244B or 198-274B). Honours section of 304-352; similar in content to 304-352 but taught in greater depth.

304-361B ELECTROMECHANICAL ENERGY CONVERSION I 3(3-0-6). (Prerequisite: 304-231). Faraday's law of electromagnetic induction, transformer and generators. Lorentz's force and Coulomb's force and their applications in industrial motors. Lumped parameter concepts of inductance and motional inductances. Energy and co-energy in the derivation of torques and forces. Structures and performance characteristics of common electric machines — dc, synchronous and induction types.

304-366 ELECTROMECHANICAL ENERGY CONVERSION I 3(3-0-6). (Prerequisite: 304-231). Honours section of Electromechanical Energy Conversion I; similar in content to 304-361 but taught in greater depth.

304-376A THERMAL PHYSICS 3(3-0-6). (prerequisites: 198-271B, 198-274B). Definition of thermodynamics; equilibrium thermodynamics; potentials as Legendre transforms of internal energy; concept of thermodynamic energies; equilibrium and non-equilibrium properties of matter; heat and current flow; statistical mechanical foundation of thermodynamics; distribution functions, application to material properties.

304-391A,B DIGITAL ELECTRONICS LABORATORY 3(1-5-3). (Prerequisite: 304-291A,B. Co-requisite: 304-322B, recommended 304-333B). Six one-week experiments covering the properties of medium and high speed logic integrated circuits, design of simple combinational and sequential circuits, characteristics of flip-flops, counters and shift registers. The course ends with a two-week project which exposes the student to control logic design and pitfalls in synchronization and in the design of asynchronous sequential circuits. Limited enrolment.

304-393A,B ELECTRONIC CIRCUITS AND SYSTEMS LABORATORY 3(1-5-3). (Prerequisite: 304-291A,B. Co-requisite: 304-303 or 304-308). Laboratory experiments on electronic circuits, signals and systems covering, amplifiers, active filters, spectrum analysis, sampling, time-multiplexed transmission and dc servomechanisms. Computer analysis and simultations of systems studied.

304-395A,B HIGH FREQUENCY LABORATORY I 3(1-5-3). (Prerequisite: 304-291A,B. Co-requisite: 304-352B or 304-357B). A set of six experiments designed to introduce the students to basic high frequency measurement techniques. These techniques are applied to the study of transmission lines, active and passive "lumped" networks.

304-396A,B POWER LABORATORY I 3(1-5-3). (Prerequisite: 304-291A,B. Co-requisite: 304-361A,B). A laboratory course to illustrate the principles of electromechanical energy conversion and to teach the techniques of electric power, torque and speed measurements. Experiments cover transformers, commutator, induction and synchronous machines as well as high voltage phenomena.

304-404B CONTROL SYSTEMS 3(3-0-6). (Prerequisite: 304-303A or 304-308A). Modelling physical systems. Analysis of linear systems: solution of state equations, controllability and observability, relationships between state and input-output descriptions. Frequency response design; trade offs, limitations, design of simple controllers. Design with optimal linear-quadratic regulator. Observers. Design of sampled data systems.

304-411A COMMUNICATION SYSTEMS 3(3-0-6). (Prerequisites: 304-303A or 304-308A, 304-305B or 189-384B). Review of power spectral analysis and

auto correlation; amplitude, single side-band modulation and demodulation; frequency and phase modulation, modulators and demodulators; stereo FM, pulse modulation, pulse width amplitude and position modulation; time and frequency multiplexing; pulse code modulation (PCM); quantization; phase shift and frequency shift keying; noise performance of various modulation schemes; representation of noise; threshold effects in PCM and FM; probability of error for pulse systems; concept of channel capacity.

304-424A SMALL COMPUTER SYSTEMS 3(3-0-6). (Prerequisite: 304-221A,B or 308-210A,B). Basic mini-computer architecture. Assembly language programming. Addressing modes. Branching mechanisms. Assemblers. Symbol tables. Subroutines and co-routines. Parameter passing. Interrupt systems and programming. Data structures. Arrays, lists, stacks, queues. Linked and threaded lists. Topics in software engineering. Top-down programming. Correctness, efficiency, modularity. Interpreters. Real-time operating system functions. Term project.

304-425B COMPUTER ORGANIZATION AND ARCHITECTURE 3(3-0-6). (Prerequisite: 304-322B. Recommended: 304-424A). Components, basic computer subassemblies. Minicomputer design, microprogramming, execution control. CPU memory timing problems, look ahead systems and pipeline computers. Array processors. Special features. Virtual memory organization. I/O Architecture. Case studies of advanced computer system organization.

304-426A,B MICROPROCESSOR SYSTEMS 3(1-3-5). (Prerequisite: 304-221A,B and 304-322B. Co-requisite: 304-424A). Introduction to current microprocessors, their architecture, programming, interfacing and operating systems. The course includes lectures, use of crossassemblers, and simulators as well as laboratory experiments on actual microprocessor hardware. Limited enrolment.

304-462B ELECTROMECHANICAL ENERGY CONVERSION II 3(3-0-6). (Prerequisite: 304-361B). Fractional horse power motors. Solid-state motor control. The structure of machines including saliency, saturation and winding harmonics. Electromechanical transients and stability analysis.

304-463A HIGH VOLTAGE ENGINEERING 3(3-0-6). (Prerequisite: 304-351A or 304-356A). Introduction to high voltage engineering. Gas discharges in uniform and non-uniform fields. Disruptive and corona discharges. Surface flashover and surface corona. Gases of high dielectric strength. Applications to basic problems of extra-high-voltage and ultra-high-voltage transmission. Corona in bundle conductors. Interference, audible noise and corona losses. Voltage distribution along insulator strings. Compact metal clad SF_6 substations. Modern high voltage laboratories. Testing techniques.

304-464A POWER SYSTEMS ANALYSIS I 3(3-0-6). (Recommended prerequisite: 304-361B). Basic principles of planning and operating interconnected power systems with emphasis on Canadian conditions. Concepts of real and reactive power. Per unit representation. Mathematical models for system studies of synchronous machines, transformers, transmission lines and loads. Steady-state analysis of power systems, load flow formulation and solution algorithms. Operating strategies, economic dispatch, voltage-reactive power regulation, frequency and tie-line power control.

304-470A,B TECHNICAL PAPER 2(0-0-6). After completion of four semesters of work, students should consult their staff advisers for guidance in the selection of suitable topics for a technical paper based on the students' non-university-course experience. The papers are due at the latest on entering the penultimate semester. Not required for students who begin the B. Eng. on/or after September 1981.

304-471B ACOUSTICS 3(3-0-6). (Prerequisites: 304-231, 189-381, 304-352B or 304-357B). This course is divided into three main topics: (1) TRANSDUCER DESIGN: wave fundamentals, directivity patterns, resonators and filters (muffler design), microphones and loudspeakers. (2) ENVIRONMENTAL ACOUSTICS: effects of noise on man, criteria for noise control, building acoustics, noise control outdoors. (3) UNDERWATER ACOUSTICS: communication in the sea, refraction, interference, sound channels, sonar, masking by noise.

304-472B COMMUNICATIONS TECHNOLOGY 3(3-0-6). (Prerequisite: 304-303A or 304-308A). Theoretical and practical aspects of communications technology will be examined through the study of existing systems which are representative of the state of the art. Case-studies will be selected from areas such as satellite communications, radio astronomy, microwave systems, radar, television and sonar.

304-474B ELECTRONIC DESIGN 3(3-0-6). (Prerequisites: 304-322B, 304-303A or 304-308A, 304-333B. Recommended: 304-352B, 304-411A). Analysis of complex electronic systems from the system design viewpoint. Factors affecting the choice of subsystem hardware; reliability, availability, cost of design and assembly. Identification of critical components and subsystems. The principles of electronic system design will be illustrated with examples drawn from the areas of instrumentation, television, radar, navigation and direction finding, broadband communication links, computers, and supervisory and control systems.

304-491A,B COMMUNICATION LABORATORY/ DESIGN PROJECT 3(0-6-3). (Prerequisite: 304-393A,B. Co-requisite: 304-411A). Experimental studies of amplitude modulation systems, single-sideband systems, and frequency modulation systems. Noise measurement technique,

measurements of the input and output signal-to-noise ratios in an AM receiving system and an FM receiving system. Experiments on a digital communication module system in sampling, time-division multiplexing, pulse code modulation, quantization error and noise performance.

304-492A,B DIGITAL SYSTEMS DESIGN PROJECT 3(0-6-3). (Prerequisite: 304-391A,B). A single major project, supervised by an interested member of staff, involving the design of hardware and/or software in areas such as interfacing or special purpose computer design, using effective combinations of MSI, LSI and micro-processors. The project is designed to provide the student with experience in program management, debugging and documentation. Limited enrolment.

304-494A,B ELECTRICAL ENGINEERING DESIGN PROJECT 3(0-5-4). (Prerequisite: A 300-level laboratory depending on project area). A series of experiments or a term project covering some aspects of a particular area of electrical engineering.

304-495A,B HIGH FREQUENCY DESIGN PROJECT LABORATORY 3(0-6-3). (Prerequisite: 304-395A,B). This laboratory consists of one or two set experiments utilizing advanced high frequency measurement techniques plus a project involving the study of antenna systems, resonators and waveguide networks.

304-496A,B POWER LABORATORY PROJECT. (Prerequisite: 304-396A,B). A laboratory project supervised by an interested staff member whose primary aim will be to expose students to the interconnection of machines and power electronics to create engineering systems. Such systems will, in some cases, be under real time computer control. Students will have the opportunity to select their experimental work from diverse areas including DC speed control systems, synchronous machine characteristics and applications, variable speed induction machine drives, high voltage testing techniques and transformer systems.

304-497A,B SOLID STATE LABORATORY PROJECT 3(0-6-3). (Prerequisite: 3 credits of 300-level laboratories, recommended 304-545A). Introduction to laboratory processes used to make semiconductor devices. The course starts with the fabrication of a large area diffused silicon diode, a selected area diode and a bipolar transistor. This is followed by the main project in which a simple integrated circuit is fabricated. The laboratory processes involved are diffusion, oxidation, photolithography, metallization, bonding and mask making.

304-498D THESIS 6(0-3-6). (Prerequisite: completion of a minimum of 60 credits in Honours Electrical Engineering.) This course involves a research or design project undertaken by a student under close supervision of a staff member. The project consists of defining an engineering problem and seeking the solution through theoretical or experimental investigations. The results are reported in a seminar as well as a thesis which must be suitably referenced, bibliographed and documented.

304-501A SYSTEMS I: ALGEBRAIC AND STATE SPACE METHODS 3(3-0-6). (Prerequisite: 304-303A or 304-308A). For students specializing in control, power, and communication systems. Review of linear algebra. Geometric approach. Range and nullspace. Caley Hamilton theory. Dynamical Systems. Decompositions and realizations for distinct eigenvalues. Invariant subspaces, projection operators, pseudoinverses. Quadratic optimal controllers and matched filters. Controllability and observability. Riccati equations. Observers. Minimal realizations. Multiple eigenvalues and the Jordan canonical form. Spectrum. Functions of a transformation. Applications to problems in control and communications.

304-502A SYSTEMS II: FREQUENCY RESPONSE METHODS IN CONTROL 3(3-0-6). (Prerequisite: 304-303A or 304-308A). For students specializing in control and power systems. Steady state behaviour. Type numbers and error coefficients. Nyquist's stability criterion. Classical compensation methods. Nichols charts. Causality, Hilbert transforms, gain-phase relations, non minimumphase elements. Limitations to sensitivity reduction by feedback. Stabilizability. Sampled systems and Z-transforms. The W-plane. Introduction to the Wiener-Hopf method and/or nonlinear systems via harmonic balance and the circle criterion.

304-503B SYSTEMS III: MULTIVARIABLE AND NONLINEAR SYSTEMS 3(3-0-6). (Prerequisites: 304-501A and 304-502A). Continuation of Systems I and II. Realization theory for dynamical systems. The Smith-McMillan form. Stability. Lyapunov's method. Stabilizability. The pole-placement problem. Global distortion theory for multivariable and nonlinear systems. The small-gain theorem, the circle theorem, diagonal dominance. Decoupling by feedback in multivariable systems. Applications to the design of multivariable regulators and servos.

304-512A DIGITAL SIGNAL PROCESSING 3(1-0-6). (Prerequisite: 304-303A,B or 304-308A). Discrete-time linear systems theory, digital filter synthesis techniques, quantization effects in digital filters, discrete Fourier transforms including FFT algorithms, high-speed convolution and correlation techniques.

304-513A COMPUTER-AIDED CIRCUIT ANALYSIS AND DESIGN 3(3-0-6). (Prerequisites: 304-302, 308-350, or permission). Formulation of network equilibrium equations — tableau formulation. Solution in the frequency domain — sparse matrix techniques. The dc solution — electronic models, solution of nonlinear algebraic equations. Solution in the time domain — dynamic models, solution techniques for stiff systems. Design and optimization — sensitivity analysis in the frequency

domain, tolerancing. Time domain design. (Alternate years, next given 82/83).

304-521B DATA COMMUNICATIONS 3(3-0-6). (Prerequisite: 304-411). Coherent system design for intersymbol interference: signal design (spectral shaping codes), PAM receiver design (matched filtering, equalization, maximum likelihood sequence estimation). Non-coherent systems: differential PSK, FSK, Start-Stop Transmission. Phase and timing recovery, scramblers. Error control and automatic repeat request.

304-522A STATISTICAL COMMUNICATION THEORY 3(3-0-6). (Corequisite: 304-411). General Principles: source and channel descriptions, communications system design as a problem in geometry. Source Digitization: entropy and the rate-distortion trade-off, lossless source codes (Huffman and run-length codes), sampling, quantization of sampled sources (optimal and adaptive quantization, delta modulation). Channel Coding: optimal coherent receivers, performance evaluation, channel capacity, the incoherent case. Modulation: threshold effect, the reason for non-linear modulation, SNR versus probability of anomaly, PPM and FM. Comparison of digital and analogue systems.

304-523B SPEECH COMMUNICATIONS 3(3-0-6). (Prerequisite: 304-303A or 304-308A). Human speech production: articulatory and acoustic descriptions; models of speech production; speech perception; digital processing of the speech signal; vocoders (format, linear predictive, cepstral); automatic speech recognition by computer; speech synthesis-by-rule; speaker recognition/verification. Some background in digital signal processing recommended.

304-524B TELECOMMUNICATION TRANSMISSION SYSTEMS 3(3-0-6). (Prerequisite: 304-411A. Recommended 304-521B and 304-522A). Transmission Media, Wire, Coax Cable, Radio, Optical Links; Analog Transmission and Multiplexing, Voice Frequency links, Modulation/Multiplexing; Digital Transmission and Multiplexing, Sampling and Quantization, Pulse Transmission, Time Division Multiplexing, Digital Radio/Modulation; Special Topics-Case Studies, Fiber Optics, Satellite Systems, Mobile Radio Systems.

304-528A (Formerly 304-628) COMMUNICATION NETWORKS 3(3-0-6). (Prerequisite: 304-305B). Modeling of Traffic: characteristics of voice, data and visual traffic, message arrival models, holding time distributions; Local Distribution: polling and random access techniques, ring topology, demand and time division multiplexing, queueing models of performance; Multiplexing: FDM, TDM, circuit switching, packet switching, message switching, analysis of blocking and delay; Networks of Queues: network flow models, congestion and flow control, optimal routing, linear programming models.

304-529A IMAGE PROCESSING AND COMMUNICATIONS 3(3-0-6). (Prerequisites: 304-221A,B, 304-303A or 304-308A). Psychophysics of vision, properties of images; sampling, digitizing, and displaying images; geometric and algebraic processing, spatial filtering, image coding and transmission; binary image analysis, segmentation, descriptions of lines and shapes; representation, software and hardware systems, applications; scene analysis.

304-530B DESIGN OF OPERATING SYSTEMS 3(3-0-6). Prerequisites: 304-221A,B and 304-424A). The purpose of an operating system. Sequential and concurrent processes. Process communication and coordination using synchronizing primitives and the monitor concept. Queueing theory and the design of efficient processor scheduling policies. Virtual memory systems-allocation policies and performance analysis. File and device management. An operating system design project.

304-531B REAL-TIME SYSTEMS 3(3-3-3). (Prerequisite: 304-322B, and 304-424A). Real-time engineering applications of computers to online control communication systems and data acquisition. This course is concerned with aspects of hardware, software, the hardware-software interface and their integration into a completed system. The course requires the completion of individual or group projects using one of the department's mini- or micro-computers.

304-532A COMPUTER GRAPHICS 3(3-3-3). (Prerequisite: 304-424A). Introduction to computer graphics systems and display devices: core or disc refreshed, storage tube, scan conversion systems; graphical input and interactive graphical techniques — light pen, joystick, Rand tablet; display files: graphics languages and data structures; 2D transformations; 3D computer graphics, hidden line removal and shading graphics system design; applications. The course will consist of lecture material as well as a laboratory project involving the preparation and running of graphics programs using microprocessors, the VAX 780 CVaG lab., and the university computing centre. (Alternate years, next given 83/84).

304-543B NUMERICAL METHODS IN ELECTROMAGNETICS 3(3-0-6). (Prerequisite: 304-351A or 304-356A). Mathematical representation of fields. Discrete approximations for continuous differential and integral operators. Methods for solving deterministic and eigenvalue problems by direct and iterative means.

304-545A MICROELECTRONICS TECHNOLOGY 3(3-0-6). (Prerequisites: 304-333, recommended: 304-331). Alloyed contacts, diffusion techniques, diffusion theory, four point probe, ion implantation, epitaxial growth, silicon dioxide formation, photolithography, window opening, selected metallization, diode and transistor fabrication, junction depth determination, junction capacitance for general profile, fabrication of monolithic integrated circuits,

isolation, junction capacitors, diffused resistors, mask making, device mounting, thin film passive components, thick film components, integrated circuit layout, MOS gate voltage, MOS integrated circuits.

304-560B POWER SYSTEMS ANALYSIS II 3(3-0-6). (Recommended prerequisite 304-464A). Three phase power systems. Symmetrical component analysis. Shunt and series faults. Calculation of sequence impedances of transmission lines for arbitrary configurations. Sequence networks for transformers, machines and systems. Transient stability analysis. Fault analysis of general systems via computer methods.

304-561A ELECTRIC MACHINE DESIGN 3(3-0-6). (Prerequisite: 304-361B). The output equations of electromagnetic apparatus. Specific electric and magnetic loading. Magnetic circuits. Time constants and power gain. Windings including pole amplitude modulation. Leakage inductances. Commutation interpoles and compensation. Per-unit values. (Alternate years, next given 83/84).

304-562A CONTINUUM ELECTROMECHANICS 3(3-0-6). (Prerequisite: 304-351A or 304-356A). Quasi-static electromagnetic field equations. Field transformation in moving co-ordinate systems. Boundary conditions and constitutive relations for moving media. Magnetic diffusion and charge relaxation in moving media. Maxwell's stress tensor for the evaluation of force densities. Electromechanics of elastic solids and Newtonian fluids. Application of theories to magneto-hydrodynamics, electro-hydrodynamics, magnetic pumps, linear induction motor and magnetic levitation. (Alternate years, next given 82/83).

304-564X CONTROL RECTIFIER CIRCUITS 3(3-0-6). (Prerequisite: 304-333B). Simple poly-phase rectifiers. Thyristor characteristics. Fully and semi-controlled bridges. Interphase transformers. Commutation, regulation and equivalent circuits. Harmonic content. Active loads. Cycloconverters.

304-565B INVERTERS AND CHOPPER CIRCUITS 3(3-0-6). (Prerequisite: 304-333B). Properties of circuits employing the forced commutation of thyristors to perform a switching function. Static and dynamic properties of thyristors and diodes. Constant voltage and constant current inverters, three phase inverters. Choppers. Motor loads. (Alternate years, next given 82/83).

304-572A LASER ELECTRONICS 3(3-0-6). (Prerequisites: 198-271B, 304-331). Review of quantum mechanical and statistical mechanical concepts and techniques. Principle of amplification by stimulated emission of radiation; analysis of resonant cavity and travelling wave maser amplifiers; coherence, stability and noise; characteristics of gaseous, solid state and semiconductor junction lasers. Nonlinear effects for modulation and detection of laser beams; applications to communication, measurements, signal processing and other fields as time permits.

304-573B MICROWAVE ELECTRONICS 3(3-0-6). (Prerequisites: 304-352 or 304-357B) and 304-331). Non-linear capacitance and resistance effects in P-N and Schottky diodes. Varactor diode harmonic multipliers, up-converter and parametric amplifier circuits. PIN diode switching circuits. GUNN and IMATT diode characteristics and circuits. Balanced and image rejection mixer diode circuits. S-parameters and flow graphs for 2-port networks. Noise theory. Filter prototype impedance matching theory. Microwave bi-polar transistor. Low noise and power amplifier circuits. Ga As FET theory and characteristics. Low noise and power amplifier circuits. FET mixers and up-converters.

304-575B OPTICAL AND MAGNETIC PROPERTIES OF SOLIDS 3(3-0-6). (Prerequisites: 304-352B or 304-357B, 304-331B). Classical and quantum theories of polarization. Band theory of solids. Dispersion relations. Tensor description of anisotropic materials. The ray ellipsoid. Double refractions, birefringence dichroism, piezoelectricity, ferroelectricity. Classical and quantum theories of magnetization. Diamagnetism, paramagnetism, ferro- and ferri-magnetism. Magnetic domains. Ferrites and Garnets. Non-reciprocal microwave devices and magneto-optic devices which exploit crystal anisotropy. (Alternate years, next given 82/83).

304-579A SEMICONDUCTOR DEVICES AND MODELS 3(3-0-6). (Prerequisite: 304-333B). Systematic methods for obtaining useful models which relate device physics to terminal behaviour. The pn junction diode, junction-gate and MOS field-effect transistors, bipolar transistor: idealized devices, practical device geometries, applications. The transistor switch. Determination of model parameters by measurement. (Alternate years, next given 82/83).

304-592A MICROWAVE THEORY AND TECHNIQUES 3(3-0-6). (Prerequisite: 304-352B or 304-357B). Transmission lines and waveguides, surface waveguides, microwave circuit theory, impedance matching and transformation, passive microwave devices, resonators, periodic structures and filters, microwave antennas.

304-593B ANTENNAS AND PROPAGATION 3(3-0-6). (Prerequisite: 304-352B or 304-357B). Near and far field behaviour or radiators; antennas as a boundary value problem; practical antenna parameters; wire antennas, antenna arrays, aperture methods of antenna analysis; measurement of input impedance, field patterns, gain and noise; point-to-point propagation, fading beyond horizon and long distance propagation, ionospheric, atmospheric and earth's surface considerations; tropospheric scatter.

304-596B OPTICAL WAVEGUIDES 3(3-0-6). (Prerequisite: 304-352B or 304-357B). Introduction

to wave optics. Diffraction theory and geometrical optics including the Kirchoff-Huygens diffraction integral and Fermat's principle. Gaussian beams. Propagation characteristics of optical fibres and dielectric waveguides. Thin film (or slab) optical waveguides. Discussion of optical communication systems.

304-602A OPTIMIZATION METHODS 4(3-0-9). (Prerequisite: 304-501A or 304-502A). Geometry of convex bodies in linear spaces and their tangent hyperplanes. Causality and pseudoinverses in a resolution space setting. Applications to optimal signal design in communication channels. (Alternate years, next given 83/84).

304-603B DETECTION, ESTIMATION AND STOCHASTIC CONTROL 4(3-0-9). (Prerequisite: 304-612A or 304-522A). Detection, Bayesian and Neyman-Pearson; Bayesian, MAP and maximum likelihood estimates; linear regression; innovations, the Kalman-Bucy filter and its properties; optimal and suboptimal nonlinear filters; optimal stochastic control with perfect and imperfect information, the certainty equivalence principle; closed-loop feedback strategies; Wiener approach to minimum variance control.

304-605B NONLINEAR AND LARGE SYSTEMS 3(4-0-9). (Prerequisite: 304-501A or 304-502A). Operator methods for nonlinear causal operators. The contraction mapping principle and small-gain theorem. Linearization of weakly non-linear systems. Circle criteria for stability. Hierarchial organization of weakly coupled systems. Periodic and subharmonic solutions. Monotonicity, positivity, and applications to stability theory of the Popov type. (Subject to enrolment).

304-606B ADVANCED TOPICS IN CONTROL 4(3-0-9). (Prerequisite: 304-503B). Topics selected from current research in large-systems theory, adaptive control, stability and algebraic methods.

304-612A RANDOM PROCESSES 4(3-0-9). (Prerequisite: 304-305B or 189-384B). Markov processes, Markov chains, correlation functions and spectra, renewal processes, queues, queuing networks.

304-613B COMPUTER-AIDED DESIGN AND SIMULATION OF ELECTRONIC CIRCUITS 4(3-0-9). (Prerequisite: 304-513A). Frequency domain sensitivity analysis: circuit optimization. Tolerance assignment, design centering and tuning. Modeling at the gate, register transfer and functional levels for timing simulation. Logic and timing simulators. Large digital circuit simulation: network partitioning and latency exploitation. (Alternate years, next given 82/83).

304-614A NETWORK SYNTHESIS 4(3-0-9). (Prerequisite: 304-303A or 304-308A). Properties of positive real functions; determination of system functions; synthesis of driving-point functions; synthesis of lossless two-ports and RC two-ports; approximation problems; synthesis of active networks. (Alternate years, next given 83/84).

304-620A INFORMATION THEORY AND CODING 4(3-0-9). (Prerequisite: 304-305B or 189-384B). Measure of information, limitations of measure, characterization of noisy channels, channel coding and capacity. Estimates for some real channels, source coding revisited (rate distortion), error coding techniques — real and imaginary, feedback and automatic repeat request channels. This course is intended to give the student an insight into the concepts and limitations of Information Theory along with a survey of current practice in error-correcting coding. (Alternate years, next given 83/84).

304-622B ADVANCED COMMUNICATIONS SYSTEMS ANALYSIS 4(3-0-9). (Prerequisite: 304-522A). This course will allow the student to study the foundations required for modelling advanced communication systems. Analysis of specific classes of systems such as telephone, satellite, troposcatter, microwave for both analog and digital data. (Alternate years, next given 81/82).

304-625B ARTIFICIAL INTELLIGENCE 4(3-0-9). Intended for students from all disciplines with strong programming backgrounds. Philosophy of artificial intelligence, AI programs and languages, representations and descriptions, exploiting constraints, rule-based systems, speech understanding systems, medical diagnosis systems, expert knowledge systems, human problem solving, computational linguistics and natural understanding, robot planning. Term project.

304-626B COMPUTER VISION 4(3-0-9). (Prerequisite: 304-529). Introduction to artificial intelligence, psychology and computer vision. Early work, computer perception of polyhedron data, natural scene analysis, object recognition, face recognition, waveform analysis, knowledge representation, learning.

304-627B FAULT TOLERANT COMPUTING 4(3-0-9). Physical Failure Vs. Logical Fault Model. Detection and Location of Faults in Circuits. Self-Checking Circuits. Built-In Testing for Very Large Scale Integration Chips. Design for Easy Testability. A Mathematical Model of System Diagnosis. Reliability by Redundancy. Software Testing and Verification. Fault-Tolerant Software. Description of Available Fault-Tolerant Systems like ESS no. 1A and PLURIBUS.

304-630A MULTIPROCESSOR AND PARALLEL PROCESSING 4(3-0-9). Motivation for Multiprocessor and Parallel Processing Systems. Systems Hardware: Crossbar Switch, Multiport Memory, Pipeline Systems, Array & Processor Organizations, Interconnection Paths, Operating System and Software: Resource Allocation and Management, Processor Intercommunication, I/O Load Balancing, System Deadlock, Description of Existing

Parallel Systems such as STARAN, ILLIAC IV and C.MMP.

304-636B REAL-TIME OPERATING SYSTEM DESIGN 4(3-0-9). (Prerequisite: 304-531B). This course is intended for students interested in real-time applications of small computers. The course includes a study of three existing real-time operating systems as well as a design project. The course content includes the following: Task scheduling mechanisms, I/O organization, bulk storage organization, incorporation of service routines. Intercomputer communication, task co-ordination, multiple computer operating systems. (Alternate years, next given 82/83).

304-637B COMPUTER SYSTEMS ANALYSIS 4(3-0-9). (Prerequisite: 304-531B). Computer system specification, hardware-software trade-offs, selection of hardware components, problem solutions using interconnected computers, choice of programming languages, structured programming, technical organization and management. The course includes three case studies and a design project. (Alternate years, next given 83/84).

304-638B ADVANCED COMPUTER DESIGN 4(3-0-9). (Prerequisite: 304-531B). This course is intended for graduate students with a good knowledge of computer organization, structure and architecture and some knowledge of microprogramming. Topics in hardware technology include functional logic building blocks, arithmetic and non-arithmetic processors, memory utilization and storage management, sequencing subsystems, transmission and exchange. Determination of expected performance by simulation; computer-aided design. Specific examples of solutions to computer design problems. Selected topics on novel computer organizations such as array, cellular and variable-structure computers. (Alternate years, next given 83/84).

304-641A APPLIED ELECTROMAGNETIC THEORY 4(3-0-9). (Prerequisite: 304-592A or 304-593B). Mathematical techniques, analytical and numerical, for solving E. M. boundary value problems. Maxwell's equations, wave dispersion, waves in gyrotropic media, Huygen's principle and Fresnel diffraction, Babinet's principle; Green's functions and integral equations, angular spectrum of plane waves, cylindrical and spherical wave functions, perturbational and variational techniques. Waveguide, antenna, scattering and diffraction problems. (Alternate years, next given 82/83).

304-647A FINITE ELEMENTS IN ELECTROMAGNETICS 4(3-0-9). (Prerequisite: 304-543B). Finite elements for the Helmholtz equation in the plane and in space. Elements for axisymmetric problems. Isoparametric and curvilinear elements; elements for nonlinear problems. Integral equations and the solution of antenna problems. Finite elements in parabolic problems. (Alternate years, next given 83/84).

304-662A ELECTRIC MACHINE DYNAMICS 4(3-0-9). (Prerequisites: 304-361B). Review of electric machine models. State-space formulation of nonlinear differential equations. Solutions through numerical integration, constant speed linearization. Models of control elements, loads, prime-movers, voltage regulators, transmission networks. State equations of integrated power system. Modal analysis of multimachine power system. Operating point stability. Transient stability analysis. Electromechanical resonance. (Alternate years, next given 83/84).

304-663X HVAC POWER TRANSMISSION. 4 Credits. Design considerations of EHV and UHV power transmission systems: audible noise, radio interference, environmental aspects of transmission lines. Coordination of system over-voltages with external and internal insulation strengths leading to economic insulation structures based on quantitative evaluation of reliability.

304-664Y HVDC POWER TRANSMISSION. 4 Credits. Principles of HVDC power, transmission: HVDC transmission circuits, bridge convertor operation, thyristor valve developments, control of HVDC systems, protection of lines and converter stations, harmonic filtering, modelling techniques for performance studies.

304-665X HIGH VOLTAGE SWITCH GEAR. 4 Credits. Typical connections and layouts of H.V. substations. Stress analysis; designs of circuit breakers, isolating switches, load switches, fuses, lighting arresters and combinations of apparatus. Direct and synthetic high power testing methods. Design of Substations: conventional design and designs considering metal-cald environment.

304-666Y POWER SYSTEM OPERATION. 4 Credits. Power system optimality criteria: economic, environmental, reliability factors. Short and long-term load forecasting; simulation of river flows; economic operations of hydroelectric thermal and hydro-steam systems. Planning of additional equipment by the global and marginal approaches. Siting of new plants. Planning of interconnections; maintenance scheduling.

304-667B MODERN TECHNIQUES FOR POWER SYSTEM ANALYSIS. 4 Credits. Mathematical descriptions of power systems suitable for computer analysis, and solutions algorithms. Topics will include: matrix algebra, incidence and network matrices, sparse matrix techniques, phase and component representation, short circuit studies, Diakoptics, load flow studies, transient and dynamic stability studies, contingency analysis, state estimation, system identification.

304-677A,B EXPERIMENTAL TECHNIQUES IN SOLID STATE 4(0-6-6). (Prerequisite: 304-331B). Experimental laboratory project in solid state involving the following. Techniques of laboratory preparation, fabrication and orientation of solid state samples and structures for experimental study. Use of

special laboratory research apparatus. Measurement of electronic, optical and structural properties of samples and structures. Evaluation and analysis of electronic behaviour and performance. Interpretation of relevant physical processes and phenomena.

304-678A SPECIAL TOPICS IN SOLIDS I 4(3-0-9). (Prerequisite: 304-332B or 304-337B). Discussion of topics in semiconductor electronics and electronic properties of materials in areas of current research to the department.

304-679B SPECIAL TOPICS IN SOLIDS II 4(3-0-9). (Prerequisite: 304-332B or 304-337B). Dielectric properties and molecular structure of solids and liquids. Dielectric theory and applications.

304-681A,B COLLOQUIUM IN ELECTRICAL ENGINEERING, 4 credits. Directed reading, seminar and discussion course in various subjects of current interest in electrical engineering research.

304-688A,B 304-689A,B RECENT ADVANCES IN ELECTRICAL ENGINEERING, 4 credits. Course content suited to the area of specialization of the lecturer.

5.6 DEPARTMENT OF MECHANICAL ENGINEERING

Chairman
M.P. Paidoussis, B.Eng.(McG.), Ph.D. (Cantab.), F.I. Mech.E., Eng.

Professors
D.R. Axelrad, M.Eng.Sc. (Sydney), D.Sc.Eng. (Vienna), M.N.A. Sc., Eng.
W. Bruce, M.A.Sc.(Tor.), Eng.
J.H.S. Lee, M.Sc.(M.I.T.), Ph.D.(McG.), Eng.
B.G. Newman, M.A.(Cantab.), Ph.D.(Sydney), F.C.A.S.I., F.R.Ae.S., Eng.

Associate Professors
A.M. Ahmed, B.Sc.(Dacca), Ph.D.(McG.), Eng.
G.G. Bach, Ph.D.(McG.)
J.C. Cherna, Dipl.Eng.(Swiss Fed. Inst.), Eng.
G.I. Fekete, M.Eng., Ph.D.(McG.), Eng.
J.M. Forde, B.Eng., M.Eng.(McG.), Eng.
R. Hoffman, M.A.Sc.(Tor.), Ph.D.(Sask.), Eng.
R. Knystautas, M.Eng., Ph.D.(McG.)
L. Kops, D.Sc.Eng. (Krakow Tech. U.), Eng.
C.L. Murphy, M.Eng., Ph.D. (McG.), Eng.
J.D. Pfeiffer, B.E.E.(Cornell), Eng.
J.W. Provan, B.Sc.(Strathclyde), Ph.D.(Colo.), Eng.
A.L. Thompson, B.A.(Bishop's), Ph.D.(McG.)
P.J. Zsombor-Murray, M.Eng., Ph.D.(McG.), Eng.

Assistant Professors
B.R. Baliga, M.S.(Case), Ph.D.(Minn.)
A.K. Misra, B.Tech.(I.I.T.,Kgp.), Ph.D.(U.B.C.)
S.J. Price, B.Sc., Ph.D.(Bristol)

Faculty Lecturers
C. Guirao, M.Sc.(Paris), Ph.D.,(Calif.)
P. Thibault, B.Eng., Ph.D.(McGill)
L. Vroomen

Special Lecturers and Laboratory Superintendents
J. Kelly, O. Muehling

Associate Members
D. Atack, B.Sc., Ph.D.(Leeds)
D. Burke, B.Eng., M.D., Montreal General Hospital
R.G. Edwards, Eng., Canadair Ltd.
M. Greenisen, Ph.D.(Mich. State), Univ. Wisconsin
H. Luckert, Ph.D.
J. Miller, M.D., Montreal General Hospital

Auxiliary Professors
M.H. Attia, F.G. Beran, M. Bahgat, C.D. Chomski, D. Doust, A. Farkas, M. Galley, R.F.W. Guard, R.L. Hemmings, V. Kappel, M. Khalid, W.D. May, J.W. Ohberg, N. Sidky, V.V. Vonka, C. Weldon

Mechanical engineers are traditionally concerned with the conception, design, implementation and operation of mechanical systems. Typical fields of work are aeronautics, energy, manufacturing, machines, and transportation. Because of the very broad nature of the discipline there is usually a high demand for Mechanical Engineers. A recent study indicated that 39% of all engineering openings were for graduates of Mechanical Engineering.

Often, a new graduate's career begins in a company design office. Here one learns to practice engineering principles, including their economic aspects. The engineer gains responsibility, along with experience, by gradually taking charge of successively larger projects and assuming the supervision of other engineering staff. The successful corporate engineer usually achieves managerial or even presidential executive levels.

Many mechanical engineers follow other career paths. Graduate studies are useful enhancement and retraining for the specialists working in a research establishment, consulting firm or in corporate research and development.

Specialty areas include bio-mechanics, systems and computer applications. Some of our graduates run their own consulting and manufacturing firms.

To prepare the Mechanical Engineer for such diverse career possibilities, there is a heavy stress on the fundamental analytical disciplines of mathematics, mechanics and thermodynamics. This is balanced by a sequence of experimental and design engineering courses which include practice in creative design, manufacture and testing. In this way students are taught to apply their analytical groundwork to the solution of practical problems.

Specialist interests are satisfied by selecting appropriate elective courses from among those offered with a specific subject concentration, such as management, industrial engineering, computer science, bio-engineering, aeronautics, combustion, systems engineering, etc. Faculty advisers will assist the student in these selections and approve their individual programs.

The Department offers an Honours Program which is particularly suitable for those with a high aptitude in mathematics and physics and which gives a thorough grounding in the basic engineering sciences. The electives in this program can be utilized to take courses with applied engineering orientation, such as those offered in the regular program, or if preferred, to obtain an even more advanced training in engineering science.

An Aeronautical Engineering Option for students in either the Regular or Honours Program wishing to specialize in this technologically very important (for Québec and Canada) and interesting field is available.

Our diverse and well-equipped laboratories include the machine tool laboratory, where students learn modern production techniques and familiarize themselves with precision manufacturing equipment including numerically controlled machine tools. Other laboratories include the aerodynamics and gas dynamics labs, containing several subsonic wind tunnels and shock tubes; vibration and controls laboratories permitting the study of dynamic behaviour and control of systems; energy transport and conversion laboratories featuring various types of engines and heat flow experiments; and a laboratory to study laser applications. Finally there is a

computer laboratory with connections to much of the equipment in other laboratories, allowing the students to learn modern techniques of automatic data acquisition, on-line process control, computer graphics and the mechanical engineering application of microprocessor systems.

While the program is demanding, it still seems to leave time for many extra-curricular activities and our students are active in such professional societies as the CSME (Canadian Society for Mechanical Engineering), CASI (Canadian Aeronautics and Space Institute), and the SAE (Society of Automotive Engineers), and in various campus organizations.

Relations between Faculty and students are extremely close. Social functions, in which students and professors meet to exchange views and get to know each other better, are frequently organized.

CURRICULUM FOR THE B.ENG. DEGREE IN MECHANICAL ENGINEERING (REGULAR) FOR STUDENTS REGISTERED IN 1980-81

		COURSE CREDIT	
REQUIRED COURSES			
Non-Departmental Subjects			
189-261A,B	Differential Equations I	3	
189-262A,B	Differential Equations II and Linear Algebra	3	
189-263A,B	Advanced Calculus	3	
189-264A,B	Introduction to Boundary Value Problems	3	
300-310A,B	Engineering Economy	3	
303-207A,B	Solid Mechanics	4	
304-281A,B	Electric Power	3	
308-208A,B	Computers in Engineering	2	24
Mechanical Engineering Subjects			
305-210A,B	Mechanics I	4	
305-220A,B	Mechanics II	3	
305-240A,B	Thermodynamics I	3	
305-260A	Machine Tool Laboratory	2	
305-261B	Measurement Laboratory	2	
305-291A,B	Graphics	3	
305-292A,B	Design I	3	
305-305A	Engineering Statistics	2	
305-314A	Dynamics of Mechanisms	3	
305-315A,B	Dynamics of Vibrations	3	
305-321B	Mechanics of Deformable Solids	3	
305-330A,B	Fluid Mechanics	3	
305-341B	Thermodynamics II	3	
305-346A,B	Heat Transfer	3	
305-362B	Mechanical Laboratory I	2	
305-383A,B	Applied Electronics and Instrumentation	3	
305-393B	Design II	3	
305-394A	Design III	3	
305-412A,B	Dynamics of Systems	3	
305-463A,B,D	Mechanical Laboratory II	4	58
ELECTIVE COURSES			
Technical Electives			
Approximately five courses to be selected from those offered by the Department or from other suitable undergraduate or graduate courses; three must be Mechanical Engineering Courses. Students who have not taken a course in Material Science at the college level must include Course 306-215A,B as one of the technical electives.			15
General Electives			3
One course			
Total			**100**

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PROGRAM OF STUDIES

For good students starting their B.Eng. (Mechanical) studies in September, a program which may be completed in six semesters is given below:

	Semester 1 (Fall)			Semester 2 (Winter)	
189-261A	Diff. Eq. I	3	189-262B	Diff. Eqn. II	3
189-263A	Adv. Calc.	3	189-264B	B.V. Problems	3
305-210A	Mechanics I	4	305-220B	Mechanics II	3
305-291A	Graphics	3	305-292B	Design I	3
305-260A	Mach. Tool Lab.	2	305-261B	Measurement Lab.	2
308-208A	Computers	2	306-215B	Materials Sci.	3
		17			17

	Semester 3 (Fall)			Semester 4 (Winter)	
305-240A	Thermodyn. I	3	305-341B	Thermodyn. II	3
305-315A	Dynamics of Vib.	3	305-346B	Heat Transfer	3
305-330A	Fluid Mech.	3	305-393B	Design II	3
305-314A	Dynamics of Mech.	3	305-321B	Mech. of Def. Sol.	3
303-207A	Solid Mechanics	4	305-362B	Mech. Lab. I	2
	Elective	3	304-281B	Electric Power	3
		19			17

	Semester 5 (Fall)			Semester 6 (Winter)	
305-412A	Dyn. of Systems	3	300-310B	Engrg. Econ.	3
305-305A	Statistics	2	305-463D	Mech. Lab. II	2
305-394A	Design III	3		Electives	9
305-463D	Mech. Lab. II	2			14
305-383A	Appl. Elec. Instr.	3			
	Electives	3			
		16			

CURRICULUM FOR THE B.ENG. DEGREE IN MECHANICAL ENGINEERING (HONOURS) FOR STUDENTS REGISTERED IN 1980-81

REQUIRED COURSES		COURSE CREDIT	
Non-Departmental Subjects			
189-261A,B	Differential Equations I	3	
189-263A,B	Advanced Calculus	3	
189-267B	Differential Equations II and Linear Algebra	3	
189-269B	Introduction to Boundary Value Problems	3	
189-385A	Complex Variables	3	
198-321A	Modern Physics	3	
300-310A,B	Engineering Economy	3	
303-207A,B	Solid Mechanics	4	
304-221A,B	Introduction to Computers	3	
304-281A,B	Electric Power	3	
308-350A,B	Methods of Numerical Analysis	3	34
Mechanical Engineering Subjects			
305-210A,B	Mechanics I	4	
305-230A,B	Mechanics II H	3	
305-240A,B	Thermodynamics I	3	
305-261B	Measurement Laboratory	2	
305-319B	Mechanics of Systems	3	
305-330A,B	Fluid Mechanics	3	
305-342A	Statistical Thermodynamics	3	
305-364A	Mechanical Laboratory I H	2	
305-365B	Mechanical Laboratory II H	2	
305-383A,B	Applied Electronics and Instrumentation	3	
305-403D	Thesis	6	
305-404B	Thesis	3	
305-424A	Stress Analysis	3	
305-452A	Mathematical Methods in Engineering I	3	
305-453B	Mathematical Methods in Engineering II	3	46
ELECTIVE COURSES			
Technical Electives			
Five courses to be selected from those offered by the Department or from other suitable graduate or undergraduate courses.			15
General Electives			
Two courses			6
Total			**101**

TYPICAL HONOURS PROGRAM

The outline below shows the pattern of a six-semester sequence of studies leading to a B.Eng. (Hon.) degree in Mechanical Engineering.

	Semester 1 (Fall)			Semester 2 (Winter)	
189-261A	Diff. Eq. I	3	189-267B	Diff. Eq. II	3
189-263A	Adv. Calc.	3	189-269B	Bound. Val. Prob.	3
305-210A	Mechanics I	4	305-230B	Mechanics II	3
305-240A	Thermodyn.	3	305-261B	Meas. Lab.	2
304-221A	Computers	3		Tech. Elective	3
		16			14
	Semester 3 (Fall)			**Semester 4 (Winter)**	
189-385A	Complex Variables	3	305-365B	Mech. Lab. II	2
305-364A	Mech. Lab. I H	2	305-319B	Mech. of Systems	3
305-330A	Fluid Mech.	3	304-281B	Elect. Power	3
305-342A	Stat. Thermo.	3		Electives	9
308-350A	Num. Anal.	3			17
198-321A	Modern Physics	3			
		17			
	Semester 5 (Fall)			**Semester 6 (Winter)**	
305-452A	Math. Methods I	3	305-453B	Math. Methods II	3
305-422A	Continuum Mech.	3	305-423B	Elasticity	3
305-403D	Thesis	3	305-403D	Thesis	3
305-383A	Appl. Elect. Instr.	3	305-404B	Thesis	3
300-310A	Eng. Economy	3		Electives	6
	Tech. Elective	3			18
		18			

CURRICULUM FOR THE B.ENG. DEGREE IN MECHANICAL ENGINEERING (REGULAR) FOR STUDENTS COMMENCING IN 1981

REQUIRED COURSES		COURSE CREDIT	
Non-Departmental Subjects			
189-261A,B	Differential Equations I	3	
189-262A,B	Differential Equations II and Linear Algebra	3	
189-263A,B	Advanced Calculus	3	
189-264A,B	Introduction to Boundary Value Problems	3	
306-310A,B	Engineering Economy	3	
303-207A,B	Solid Mechanics	4	
304-281A,B	Electric Power	3	
306-215A,B	Material Science	3	
308-208A,B	Computers in Engineering	2	27
Mechanical Engineering Subjects			
305-210A,B	Mechanics I	4	
305-220A,B	Mechanics II	3	
305-240A,B	Thermodynamics I	3	
305-260A	Machine Tool Laboratory	2	
305-261B	Measurement Laboratory	2	
305-291A,B	Graphics	3	
305-292A,B	Design I	3	
305-314A	Dynamics of Mechanisms	3	
305-315A,B	Dynamics of Vibrations	3	
305-321A,B	Mechanics of Deformable Solids	3	
305-331A,B	Fluid Mechanics I	3	
305-341B	Thermodynamics II	3	
305-346A,B	Heat Transfer	3	

305-362B	Mechanical Laboratory I	2	
305-383A,B	Applied Electronics and Instrumentation	3	
305-393B	Design II	3	
305-394A	Design III	3	
305-412A,B	Dynamics of Systems	3	
305-430B	Fluid Mechanics II	2	
305-463A,B,D	Mechanical Laboratory II	4	58

ELECTIVE COURSES

Technical Electives

Approximately four courses to be selected from those offered by the Department or from other suitable graduate courses; three must be Mechanical Engineering courses. Students who have not taken a course in Statistics at the college level must include 305-305A as one of the technical electives. 12

Humanities, Social Sciences and Administrative Studies

Two courses selected from a list of approved courses. 6

Total **103**

PROGRAM OF STUDIES

For good students starting their B.Eng. (Mechanical) studies in September, a program which may be completed in six semesters is given below:

Semester 1 (Fall)

189-261A	Diff. Eq. I	3
189-263A	Adv. Calc.	3
305-210A	Mechanics I	4
305-291A	Graphics	3
305-260A	Mach. Tool Lab.	2
308-208A	Computers	2
		17

Semester 2 (Winter)

189-262B	Diff. Eq. II	3
189-264B	B.V. Problems	3
305-220B	Mechanics II	3
305-292B	Design I	3
305-261B	Measurement Lab.	2
306-215B	Material Sci.	3
		17

Semester 3 (Fall)

305-240A	Thermodyn. I	3
305-315A	Dynamics of Vib.	3
305-331A	Fluid Mech. I	3
305-314A	Dynamics of Mech.	3
303-207A	Solid Mechanics	4
	Elective	3
		17

Semester 4 (Winter)

305-341B	Thermodyn. II	3
305-393B	Design II	3
305-345B	Heat Transfer	3
305-362B	Mech. Lab. I	2
305-430B	Fluid Mechs. II	2
304-281B	Electric Power	3
		16

Semester 5 (Fall)

305-412A	Dyn. of Systems	3
305-321A	Mech. of Def. Sol.	3
305-394A	Design III	3
305-383A	Appl. Elect. Instr.	3
305-463D	Mech. Lab. II	2
	Elective	3
		17

Semester 6 (Winter)

300-310B	Engrg. Econ.	3
305-463D	Mech. Lab. II	2
	Electives	12
		17

CURRICULUM FOR THE B.ENG. DEGREE IN MECHANICAL ENGINEERING (HONOURS) FOR STUDENTS COMMENCING IN 1981

REQUIRED COURSES		COURSE CREDIT	
Non-Departmental Subjects			
189-261A,B	Differential Equations I	3	
189-263A,B	Advanced Calculus	3	
189-267B	Differential Equations II and Linear Algebra	3	
189-269B	Introduction to Boundary Value Problems	3	
189-385A	Complex Variables	3	
198-321A	Modern Physics	3	
306-310A,B	Engineering Economy	3	
303-207A,B	Solid Mechanics	4	
304-221A,B	Introduction to Computers	3	
304-281A,B	Electric Power	3	
308-350A,B	Methods of Numerical Analysis	3	34
Mechanical Engineering Subjects			
305-210A,B	Mechanics I	4	
305-230A,B	Mechanics II H	3	
305-240A,B	Thermodynamics I	3	
305-261B	Measurement Laboratory	2	
305-319B	Mechanics of Systems	3	
305-331A,B	Fluid Mechanics I	3	
305-342A	Statistical Thermodynamics	3	
305-364A	Mechanical Laboratory I H	2	
305-365B	Mechanical Laboratory II H	2	
305-383A,B	Applied Electronics and Instrumentation	3	
305-403D	Thesis	6	
305-404B	Thesis	3	
305-424A	Stress Analysis	3	
305-430B	Fluid Mechanics II	2	
305-452A	Mathematical Methods in Engineering I	3	
305-453B	Mathematical Methods in Engineering II	3	48

ELECTIVE COURSES

Technical Electives

Five courses to be selected from those offered by the Department or from other suitable graduate or undergraduate courses. 15

Humanities, Social Sciences and Administration Sciences

Two courses selected from a list of approved courses. 6

Total **103**

TYPICAL HONOURS PROGRAM

The outline below shows the pattern of a six-semester sequence of studies leading to a B.Eng. (Hon.) degree in Mechanical Engineering.

Semester 1 (Fall)			**Semester 2 (Winter)**		
189-261A	Diff. Eq. I	3	189-267B	Diff. Eq. II	3
189-263A	Adv. Calc.	3	189-269B	Bound. Val. Prob.	3
304-221A	Computers	3	304-281B	Electric Power	3
305-210A	Mechanics I	4	305-230B	Mechanics II H	3
305-240A	Thermodyn.	3	305-261B	Meas. Lab.	2
				Elective	3
		16			17
Semester 3 (Fall)			**Semester 4 (Winter)**		
189-385A	Complex Variables	3	303-207B	Solid Mechanics	4
198-321A	Modern Physics	3	305-365B	Mech. Lab. II H	2
305-364A	Mech. Lab. I H	2	305-319B	Mech. of Systems	3
305-331A	Fluid Mech. I	3	305-430B	Fluid Mech. II	2
305-342A	Stat. Thermo.	3		Electives	6
308-350A	Num. Anal.	3			
		17			17
Semester 5 (Fall)			**Semester 6 (Winter)**		
305-452A	Math. Methods I	3	305-453B	Math. Methods II	3
305-424A	Stress Analysis	3	305-403D	Thesis	3
305-403D	Thesis	3	305-404B	Thesis	3
305-383A	Appl. Elect. Instr.	3		Electives	9
306-310A	Eng. Economy	3			
	Elective	3			
		18			18

LIST OF DEPARTMENTAL TECHNICAL ELECTIVES

305-305A	Engineering Statistics	2
305-316B	Dynamics of Engineering Systems	3
305-343A	Energy Conversion	3
305-355A	Laboratory and Industrial Process Automation	3
305-370A,B	Applications of Computer Graphics	3
305-372A	Machining Processes	3
305-413B	Control Systems	3
305-418B	Measurement Engineering	3
305-431B	Gas Dynamics	3
305-432A	Aircraft Structures	3
305-434B	Turbomachinery	3
305-447B	Combustion	3
305-471A	Industrial Engineering	3
305-472A	Case Studies in Project Management	3
305-473B	Production Systems	3
305-474B	Operations Research	3
305-475A	Numerical Control of Machine Tools	3
305-495A	Design IV	3
305-496B	Design V	3
305-497A	Value Engineering	3
305-500A,B	Selected Topics in Mechanical Engineering	3
305-507X	Numerical Analysis for Computer Users I	3
305-515A	Industrial Aerodynamics	3
305-518B	Random Processes in Engineering	3
305-520B	Statistical Mechanics	3
305-525B	Introduction to Nuclear Engineering	3
305-527B	Computer-Aided Mechanical Design	3
305-528A	Manufacturing Automation	3
305-531B	Aeroelasticity	3
305-532B	Aircraft Performance Stability and Control	3
305-533A	Subsonic Aerodynamics	3
305-560B	Biomechanics of Tissues	3
305-561B	Biomechanics of Musculoskeletal Systems	3

AERONAUTICAL ENGINEERING OPTION

Students in this Option should take five elective courses in the area of Aeronautical Engineering. Specifically they should complete five of the following courses:

Gas Dynamics	305-431 B
Aircraft Structures	305-432 A
Turbomachinery	305-434 B
Aeroelasticity	305-531B
Aircraft Performance Stability and Control	305-532 B
Subsonic Aerodynamics	305-533 A

They should also discuss the matter with their adviser and complete a special form indicating their intention to take this Option.

COURSES OFFERED BY THE DEPARTMENT

305-210A,B MECHANICS I 4(4-1-7). Introduction to Mechanics. Fundamental quantities, Conservation of mass. Kinematics, momentum and force; conservation of momentum; Newton's Laws; concepts of force and impulse; angular momentum and its conservation; central force motion; various classes of forces (electrostatic, friction, gravity, etc.) and pseudo-forces; relative motion. Energy: kinetic, potential and other mechanical forms; work. Static equilibrium; statics, electrostatics, hydrostatics and elastostatics. Centre of mass and moment of inertia. Rigid-body dynamics. Connection of mechanics and other branches of engineering.
Professors Lee and Knystautas

305-220A,B MECHANICS II 3(3-1-5). (Prerequisite: 305-210A,B). Classification of mechanics. Coordinate systems and relative motion. Degress of freedom, generalized coordinates and constraints. Newtonian, Lagrangian and Hamiltonian formulations of mechanics. Solution of equations of motion for simple systems. Rigid-body dynamics; Euler's equations. Energy methods; stability and the phase plane.
Professors Baliga and Knystautas

305-230B MECHANICS II HONOURS 3(3-1-5). (Prerequisite: 305-210A,B). Same topics as covered in Mechanics II, but in a manner and with the stress appropriate for honours students.
Professors Baliga and Knystautas

305-240A,B THERMODYNAMICS I 3(3-1-5). Basic concepts: macroscopic vs. microscopic point of view; states and processes; conservation and transformation of energy. Phase equilibrium; equations of state; thermodynamic properties. Work and heat. First law of thermodynamics; energy equations; internal energy; enthalpy; specific heat of ideal gases. Thermodynamic processes: reversibility, polytropic processes, applications of first law. Second law of thermodynamics. Entropy changes in thermodynamic processes: principle of increase of entropy. Basic power and refrigeration cycles.
Professors Bruce and Forde

305-260A MACHINE TOOL LABORATORY 2(1-3-2). Principal metal cutting machine tools; their scope and operating functions. Related measuring instruments. Laboratory exercises with extensive hands-on experience with these machine tools and metrological instrumentation. Manufacture of work pieces from formal operations lists. Generation of operations lists from working drawings or equivalent specifications. Comparison of prototype and series production methods including the consideration of tooling aspects. Introduction to numerically controlled machine tools.
Mr. Muehling and Staff

305-261B MEASUREMENT LABORATORY 2(2-3-1). Basic experimental laboratory measurements, such as measurement of temperature, pressure, force, torque, small time intervals, velocity, acceleration. Criteria for selection of instruments.
Mr. Vroomen

305-262B MANUFACTURING PRODUCTION 3(3-3-3). Industrial manufacturing operations, with an emphasis on metal cutting machine tools, will be described and practised. Lectures are complemented by laboratory demonstrations and student exercises on machine tools and with metrological instruments. Topics include operation of machine tools, process selection, machining accuracy, manufacturing methods related to product design, repeatability, inspection, quality control, production efficiency and stecification and selection of machine tools. These topics are integrated to develop the concept of the entire production system. (Not open to students who have taken 305-260)
Professor Cherna, Mr. Muehling and Staff

305-290A,B GRAPHICS 2(1-3-2). Descriptive geometry convention, point, line and plane problems, intersection, developments, auxiliary view and direct methods. Graphical statics, concurrent force problems including pure axial force plane structures. Structural drafting pertaining to steel, concrete and timber construction, standards and conventions. Drafting room exercises are assigned. This course is intended for Civil Engineering students.
Professors Cherna and Zsombor-Murray

305-291A,B GRAPHICS 3(3-3-3). Descriptive geometry, convention, point, line and plane problems, intersection and developments, auxiliary view and direct methods. Working drawings and conventions, fits and tolerances, welding symbols, surface finish, threaded fasteners, representation of standard mechanical components: motors, cylinders, bearings, gears and other elements. Use of sections and pictorials. Bills of material and cataloging. Drafting room exercises are assigned..
Professors Cherna and Kops

305-292A,B DESIGN I 3(1-3-5). (Prerequisite 305-291A,B, Pre- or Co-requisite: 305-260A). Introduction to design. Problem formulation; idea conception; feasibility study; preliminary design; design; optimal design. The student's creative ability will be developed by having to participate in a number of design projects. Case-study methods will be used to analyse actual design projects.
Professors Fekete, Hoffman, Pfeiffer and Zsombor-Murray

305-293A GRAPHICS FOR THE MINERAL INDUSTRY 2(2-3-1). Descriptive geometry fundamentals; point, line and plane problems; intersections, developments, auxiliary views; mining applications – Working drawings; conventions, sectioning, dimensioning, symbols and notation, drawing interpretation, oblique and isometric drawings and sketching. Contour mapping; nomography and graphical solutions. Introduction to computer graphics software and techniques.
Professors Cherna and Zsombor-Murray

◎ **305-305A ENGINEERING STATISTICS 2(2-1-3).** (Prerequisite: 189-261A,B). Combinatorial analysis. Concept of random variable; distribution function; mean; variance; correlation; Binomial, Poisson, Normal, Uniform, Student's T, and F distributions. Law of large numbers; central limit theorem. Point and interval estimation; method of maximum likelihood. Hypothesis testing; goodness of fit. Experimental design: analysis of variance; regression analysis. Stochastic processes.
Professor Bach

305-314A DYNAMICS OF MECHANISMS 3(3-1-5). (Prerequisite: 305-210A,B). First principles of analysis; vector geometry; motion; position; displacement; velocity; acceleration; force; inertia and its effects. Kinematic and dynamic analysis of rigid bodies in pure rotation and in pin-connected systems; dynamic balance. The engine complex. Rigid bodies in rolling contact; planetary gear-trains. Bodies in sliding contact; lower and higher sliding pairs. Cam analysis. Emphasis will be placed on graphical methods of solution.
Professor Ahmed

305-315A,B DYNAMICS OF VIBRATIONS 3(3-1-5). (Prerequisite: 305-220A,B). Theory and application in the field of vibrations. From one degree-of-freedom linear vibrations through multidegree lumped parameter systems. Continuous systems analysis, nonlinear vibrations and random vibrations.
Professors Forde and Misra

◎ **305-316B DYNAMICS OF ENGINEERING SYSTEMS 3(3-1-5).** (Prerequisite: 305-315A,B). More advanced topics in dynamics of mechanical systems, including non-linear systems, self-excited systems, etc. Application of analogue computer to the solution of problems in dynamics. A variety of cases, involving complete systems will be studied to illustrate the above material and to provide the student with some knowledge of the techniques of solution.
Professor Forde

305-319B MECHANICS OF SYSTEMS 3(3-1-5). (Prerequisite: 305-230B Pre- or co-requisites: 189-269A,B and 308-350A,B). Langrangian and Hamiltonian dynamics. Variational methods. Discrete linear systems; classical and numerical solutions for conservative and non-conservative systems; matric function methods. Electrical-mechanical-acoustical analogues. Stability considerations and closed-loop systems. Vibration of distributed parameter systems. Energy methods. Nonlinear vibrations; the phase plane and other methods of solution.
Professor Paidoussis

305-321B MECHANICS OF DEFORMABLE SOLIDS 3(3-1-5). (Prerequisite: 303-207A,B). Modern phenomenological theories of the behaviour of engineering materials. Stress and strain concepts and introduction to constitutive theory. Applications of theory of elasticity and thermoelasticity. Introduction to plasticity. Deviatoric stress and strain. Introduction to linear viscoelasticity. Simple mechanical models and the nature of viscoelastic behaviour.
Professor Provan

305-330A,B FLUID MECHANICS 3(3-1-5). (Co-requisite: 189-264A,B). Review of relevant mechanics and thermodynamics: fluid properties; stress in a continuum; fluid kinematics; rates of strain, rotation. Control volume analysis; conservation of mass and of linear momentum; Euler and Bernoulli equations; Flow measurement. Dimensional analysis and dynamical similarity. Conservation of energy; compressible flow; speed of sound, flow with area change. Laminar and turbulent boundary layers. Turbulent jets, hydrodynamic lubrication.
Professors Newman and Fekete

305-331A,B FLUID MECHANICS I 3(3-1-5). (Pre- or Co-requisite: 189-264A,B). Review of relevant mechanics and thermodynamics: fluid properties; stress in a continuum; fluid kinematics; rates of strain, rotation. Control volume analysis; conservation of mass and of linear momentum; Euler and Bernoulli equations; Flow measurement. Dimensional analysis and dynamical similarity. Laminar and turbulent boundary layers. Turbulent jets, hydrodynamic lubrication.
Professors Newman and Fekete

305-341B THERMODYNAMICS II 3(3-1-5). (Prerequisite: 305-240A). Irreversibility and availability, Gibbs and Helmholtz functions. Maxwell relations: generalized thermodynamic relations and charts; equations of state; Clapeyron equation, Joule-Thomson coefficient, volume expansivity and isothermal and adiabatic compressibility. Ideal and real gas and vapour mixtures, psychrometry and airconditioning processes. Reactive mixtures, stoichiometry of fuels, flame temperatures, dissocia-

tion and chemical equilibrium. Modified and improved power and refrigeration cycles.
Professor Bruce

305-342A STATISTICAL THERMODYNAMICS 3(3-1-5). (Prerequisite: 305-240A). Molecular interpretation of the laws of thermodynamics. Kinetic theory. Transport phenomena. Classical and quantum statistical mechanics. Phase space and Gibbsian ensembles. Thermodynamics of poly-atomic gases with kinetic, vibrational, rotational excitation; crystalline solids, photon gas, electron gas, vapors, dense gases, liquids and chemical systems.
Professor Lee

◎ **305-343A ENERGY CONVERSION 3(3-1-5).** (Prerequisite: 305-341B). A comprehensive overview of energy conversion flow systems concentrating on: thermoelectrics, photovoltaics, fuel cells, solar radiation, MHD, nuclear and heat engines. Irreversible thermodynamics, and basic theoretical models will be covered to provide an understanding, but practical applications, based on experimental properties for determining efficiencies, outputs, size optimization, etc. will be stressed more.
Professor Murphy

305-346A,B HEAT TRANSFER 3(3-1-5). (Prerequisite: 189-264A,B). Steady state conduction with and without heat generation, extended surfaces. Unsteady state conduction in plates, cylinders and spheres. Convective heat transfer, boundary layer equations, dimensionless parameters, analogy between momentum, heat and mass transfer. Natural convection. Heat exchangers. Radiant heat transfer, black and grey body radiation. interchange factors.
Professors Baliga and Murphy

◎ **305-355A LABORATORY AND INDUSTRIAL PROCESS AUTOMATION 3(1-3-5).** (Prerequisite: 305-261B & 308-208 or 304-221 or Instructor's permission). Review of principles of instrument transducers. Introduction to servo-actuation. Performance testing using automated data acquisition, post-processing and graphical reporting. Pertinent laboratory assignments using large scale industrial process control computer and microprocessor.
Mr. Vroomen and Professor Zsombor-Murray

305-362B MECHANICAL LABORATORY I 2(0-3-3). (Pre- or co-requisite:- 305-261B; 305-315A,B; 305-330A; 305-341B; 305-346A,B). Experiments illustrating theory covered in courses on thermodynamics, mechanics, fluid dynamics, heat transfer.
Professor Murphy and Staff

305-364A MECHANICAL LABORATORY I H 2(0-3-3). (Prerequisite: 305-261B. Candidates must also have completed at least 30 credits worth of Mechanical Engineering Program). Selected laboratory assignments integrated with the respective lecture courses.
Professor Fekete

305-365B MECHANICAL LABORATORY II H 2(0-3-3). (Prerequisite: 305-364A). Continuation of 305-364A.
Professor Fekete

◎ **305-370A,B APPLICATION OF COMPUTER GRAPHICS 3(3-3-3).** (prerequisite: 308-208A, B or knowledge of FORTRAN) Review of ANSI standard FORTRAN IV. Run time environment with online graphics. Symbolic or character input/output and graphics data base; raster image. Graphical input/output. Graphics applications packages. Fundamental graphics subroutines and their synthesis in user applications.
Professor Zsombor-Murray and Mr. Vroomen

• **305-372A MACHINING PROCESSES 3(2-2-5).** (Prerequisite: 305-260A). Analysis of metal removal processes provides the clue for controlling them for productivity, economy and quality. Mechanics of metal cutting: chip formation, cutting forces and energy consumption; action of cutting fluids; thermal aspects and vibrations in cutting. Performance of the machine-tool. Machinability, tool wear and tool life, economical criteria for the selection of cutting parameters. Mechanics of grinding; other abrasive processes. Nonconventional machining processes: electro-discharge, electro-chemical, laser machining. Effect of machining practice on surface integrity. Lectures are accompanied by laboratory experiments.
Professor Kops

305-383A,B APPLIED ELECTRONICS AND INSTRUMENTATION 3(3-2-4). (Prerequisite: 305-261B,L and 304-281A,B). Introduction to discrete and integrated components, both analogue and digital. Characteristics of passive elements. Semiconductors, amplifiers, filters, oscillators, modulators, power supplies and nonlinear devices. Introduction to digital electronics. Transducer/signal conditioner interfacing considerations. Application exercises, problems and projects will be assigned.
Staff

305-393B DESIGN II 3(2-4-3). (Prerequisite: 305-292A,B. Pre- or co-requisite: 303-207A,B). Continuation of Design I, introducing loading and stress calculations, component part design, friction, lubrication and wear, design using plastic materials, etc. Design projects will involve the application of knowledge acquired in the lectures and in the prerequisite courses to the solution of engineering design problems.
Professor Pfeiffer and Staff

305-394A DESIGN III 3(2-4-3). (Prerequisite: 305-393B). Students will work in small groups on selected design projects with consultation by the staff. Lecture topics: use and selection of mechanical components, special purpose mechanisms, functional design of machine elements, power transmission and energy storage.
Professor Pfeiffer and Staff

305-403D THESIS (HONOURS) 6(0-6-12). (Prerequisite: Candidates must have completed courses in the Mechanical Engineering Program weighted at a minimum of 60 credits). This course, together with course 305-404B, involves a research or design project undertaken by each student, encompassing interrelated aspects of engineering theory and requiring a theorectical and/or experimental investigation. Students will work under the supervision of one or more staff members; completed work will be submitted in the form of a thesis. The grade awarded for this part of the course depends on the assessment of the quality of theoretical and/or experimental work undertaken by the students.
Professor Paidoussis and Staff

305-404A,B THESIS (HONOURS) 3(0-3-6). (Co-requisite: 305-403D). This course is part of the same thesis project as for course 305-403D. The grade for this part of the course covers the orderly development and presentation of ideas, and their incorporation in the thesis.
Professor Paidoussis and Staff

305-412A,B DYNAMICS OF SYSTEMS 3(3-1-5). (Pre-requisite: 305-220A,B). Dynamic analysis of linear, lumped-parameter, stationary, deterministic engineering systems including elementary feedback control systems. Introduction: static vs. dynamic performance, the systems approach. Mathematical modelling: generalized elements, signals, impedance, sources and ends; linearization and idealization; modelling of passive ladders and networks, transducers and prime-movers. Response: idealized vs. "real-world" inputs, frequency spectrum; steady state, transient and frequency response analysis and specifications. Feedback control systems: the concept of stability.
Professors Ahmed, Hoffman

- **305-413B CONTROL SYSTEMS 3(3-1-5).** (prerequisite: 305-412A,B). Digital and analogue simulation of control systems. Classical design of controllers and compensators for single-loop feedback control. Tuning of industrial PID controllers. Discrete-time systems, the z-transform and direct-digital control. State-space representation of dynamic systems. Concepts of controllability, observability and pole assignment via state feedback. Introduction to optimal control.
Professor Hoffman

- **305-418B MEASUREMENT ENGINEERING 3(3-1-5).** (Prerequisite: 304-281A,B). General principles of measurement, functional elements, transducers, systems and performance characteristics. Active electronic circuits, amplifiers and feedback. General techniques of signal processing, transmission and recording.
Staff

- **305-422A CONTINUUM MECHANICS 3(2-2-5).** (Prerequisite: 305-230A,B Co-requisite: 189-385A.) Definition of a continuum. The Cauchy stress concept which gives the balance of forces within a material. Vector and tensor fields. Strains and kinematics of deformation. Equations of motion. Thermodynamics of continua. The basic laws for predicting the behaviour of the continuum.
Professor Provan

- **305-423B THEORY OF ELASTICITY 3(2-2-5).** (Prerequisite: 305-422A). Basic equations of elasticity and thermoelasticity. Methods of solution of two and three-dimensional problems. Dynamic problems and wave propagation in solids. Inelastic response behaviour of solids.
Professor Provan

305-424A STRESS ANALYSIS 3(3-1-5). (Prerequisites: 303-207A,B and 189-269B). The continuum concepts of stress, stress boundary conditions, principal stresses and the equations of motion. Small strain theory, principal strains. The elastic constitutive relations. The extension, torsion and flexure of mechanical components. Plane stress and strain. The variational principles of elasticity. Stiffness matrix procedures and the finite element method. Computer techniques are utilized throughout the course.
Professor Provan

305-430B FLUID MECHANICS II 2(2-1-3). (Prerequisites: 305-240A,B and 305-331A,B). Flow of a compressible continuum. First and second law of thermodynamics. Speed of sound. Mach number and Mach angle. One dimensional isentropic flow and choking. Nozzles and wind tunnels. Normal and oblique shock waves, blast waves. Flow in constant area ducts with friction and heat exchange. Prandtl-Meyer expansion. Supersonic aerofoil and wing theory.
Professors Newman and Price

- **305-431B GAS DYNAMICS 3(3-1-5).** (Prerequisite: 305-330A,B). Review of fluid dynamics and thermodynamics. Motion of sound waves — isentropic flow — normal shocks — flow in nozzles, wind tunnels and shock tubes — oblique shocks. Prandtl-Meyer flow. Flow in inlets and over air-foils. Method of characteristics (two-dimensional, steady flow). Supersonic wing theory. Flow with friction and heat addition.
Dr. Guirao

- **305-432A AIRCRAFT STRUCTURES 3(3-1-5).** (Prerequisites: 305-330A,B; 305-321B). The transformation equations of plane stress and strain. Theories of failure. Plastic and viscoelastic stress-strain relations. Relationships between external and internal forces in spars. Bending, deflection of beams, plastic deformation and aeroelastic distortion of wings and fuselage. Structural characteristics of wings. Torsion of wings and related critical aeroelastic design parameters; divergence and aeroelastic twist. Energy methods. Buckling problems in aeronautical structures. Flutter.
Dr. Khalid

◎ **305-434B TURBOMACHINERY 3(2-2-5).** (Prerequisite: 305-330A,B). A broad general treatment of energy transfer between a fluid and a rotor, velocity vector diagrams, and non-dimensional characteristics. Applications to hydraulic pumps and turbines. Two dimensional cascade theory leading to study of axial gas compressors and turbine stages. Three dimensional free and forced vortex configurations. Centrifugal compressors and radial inflow turbines. Design of gas turbine engines with performance matching. Related problems of operating characteristics, noise, ducted fans etc.
Professor Murphy

◎ **305-447B COMBUSTION 3(3-1-5).** (Prerequisite: 305-240A,B). Thermal explosion theory, constant volume combustion, premixed laminar flames, ignition quenching and flammability limits, flame stabilization, turbulent flames, combustion instability and noise, diffusion flames, combustion of liquid and solid fuels, detonations, air pollution and fires.
Professor Knystautas

305-452A MATHEMATICAL METHODS IN ENGINEERING I 3(2-2-5). (Prerequisite: Candidates must have completed courses in the Mechanical Engineering Program weighted at 60 credits (minimum)). The underlying theory and application of mathematical methods in fluid dynamics, vibration, stress and strain analysis, heat transfer, etc. The eigenvalue problem, methods in analysis.
Professor Bach

305-453B MATHEMATICAL METHODS IN ENGINEERING II 3(2-2-5). (Prerequisite: 305-452A). Continuation of the underlying theory and application of mathematical methods in fluid dynamics, vibration, stress and strain analysis, heat transfer, etc. Spherical and cylindrical harmonics, Laplace and Fourier series and transforms, variational perturbation techniques, introduction to theory of distributions and generalized functions.
Professor Bach

305-463A,B,D MECHANICAL LABORATORY II 4 Credits. (Prerequisite: 305-362B). A selection of laboratory projects will be offered and carried out by students working in small groups.
Professor Kyrtatos and Staff

◎ **305-471A INDUSTRIAL ENGINEERING 3(3-1-5).** (Prerequisite: 305-305A). Factory planning, plant location, layout and services, production line techniques, methods engineering, design of work systems, measurement of performance (time study, work sampling, synthetic time data), quality control systems, maintenance, safety.
Professor Cherna

◎ **305-472A CASE STUDIES IN PROJECT MANAGEMENT 3(4-0-5).** (Prerequisite: U3 standing). Introduction to principles of the intergrated multidisciplinary approach to project management with the emphasis on "engineer-procure-construct" projects. Topics are: planning the project, estimating, cost control, engineering management, procurement management and construction management. The main part of the course consists of seminars, where practising project managers discuss actual situations. Examples are mainly drawn from major mechanical engineering projects.
Mr. Sidky and Professor Zsombor-Murray

◎ **305-473B PRODUCTION SYSTEMS 3(2-2-5).** (Prerequisite: 305-393B). Production function. Concepts of systems approach in production management. Analysis of product design and manufacturing interface. Process planning. Network planning methods. Information systems and automation; Economical aspects of NC Machine Tools. Scheduling and control of operations. Computer-aided manufacturing.
Professor Kops

◎ **305-474B SELECTED TOPICS IN OPERATIONS RESEARCH 3(3-1-5).** (Prerequisite: 305-305A). Introduction to the general mathematical programming problem in the context of engineering design; linear programming, queueing theory, Monte Carlo simulation. The above techniques will be used to study the optimization of engineering systems. The applications of linear programming in its various manifestations will be examined in depth.
Professor Zsombor-Murray

◎ **305-475A NUMERICAL CONTROL OF MACHINE TOOLS 3(3-2-4).** (Prerequisite or co-requisites: 305-260A, 305-291A, 308-208A,B or equivalent). This course is intended to give the student as broad an exposure as possible to the technology of numerically controlled machines with emphasis on the software aspects. The student will be given a number of programming assignments some requiring him to actually machine a prototype on the NC machines in the department. Both manual and computer-aided programming are covered.
Professor Hoffman

◎ **305-495A DESIGN IV 3(0-6-3).** (Prerequisite: 305-394A). A design project course of one or two terms, with 305-496B Design V as the second (or first) term. Allows the completion of a project of greater complexity than Design II & III with emphasis on analytic solutions, stressing, planning for production. No lectures. Weekly consultations are to be held with the instructors. Reports required: design proposal, feasibility study, mid-term report, final report in the form of an engineering paper, with supporting engineering drawings.
Professor Pfeiffer and Mr. Edwards

◎ **305-496B DESIGN V 3(0-6-3).** Continuation of Design IV (or alternate term). See description above.
Professor Pfeiffer and Mr. Edwards

◎ **305-497A VALUE ENGINEERING 3(0-8-1).** (Prerequisites: 305-260, 305-393 and completion of 45 credits). Value Engineering is an in-depth analysis of an industrial product or process with a view to improving its design and/or performance to increase its worth. This is a workshop type of course. Projects will be supplied by industrial firms and stu-

dents will work together with industrial personnel, in teams.
Professor Pfeiffer and Staff

◎ **305-500A,B SELECTED TOPICS IN MECHANICAL ENGINEERING 3(3-0-6).** A course to allow the introduction of new topics in Mechanical Engineering as needs arise, by regular and visiting staff.
Professor Kyrtatos

◎ **305-507X NUMERICAL ANALYSIS FOR COMPUTER USERS I 3(3-0-6).** Various topics from numerical analysis are selected with an eye to computer usage. Review of finite differences, interpolation and quadrature, ordinary differential equations.
Professor Bach

• **305-515A INDUSTRIAL AERODYNAMICS. 3(3-0-6).** Characteristics of the earth's boundary layer, flow patterns around buildings and structures, their effect on the dispersal of pollutants, modeling and model testing, wind tunnel corrections, shelter provided by buildings, pressure distribution over buildings providing data for the structural designer, wind-induced oscillations of buildings and structures.
Professors Fekete and Price

• **305-518B RANDOM PROCESSES IN ENGINEERING. 3(3-1-5).** (Prerequisite: elementary probability or statistics). Probabilistic, spectral and correlation analysis of stochastic processes with engineering applications including random vibrations, turbulence, queueing problems, Brownian motion, diffusion and aggregation. Probabilistic theory includes: introduction to phase space ensembles and ergodicity, discrete and continuous probability distributions, moments and generating functions, joint and conditional probability. Normal, exponential, Poisson and Markov processes are analysed using analytical and Monte Carlo methods.
Dr. Thibault

◎ **305-520B STATISTICAL MECHANICS 3(3-1-5).** (Prerequisite: 305-342A). Classical mechanics, fundamental hypothesis, H-theorem, coarse graining and contraction, Liouville equation, perturbation theory of Bogoliubov, Frieman and Sandri, the kinetic equations of Boltzmann, Fokker-Planck, Vlasov and Lenard-Balescu, the hydro-dynamic equations and transport phenomena, stochastic processes, fluctuations, the Master equation, Onsager relations, Langevin equations and Brownian motion.
Professor Lee

◎ **305-525B INTRODUCTION TO NUCLEAR ENGINEERING 3(3-1-5).** (Prerequisites: 305-330, 305-341, 305-346). Elements of nuclear physics. The CANDU Power Plant description. The engineering aspects of nuclear power station design, covering the design of moderator and coolant systems, core fuel cycles, isotope separation plants and waste management systems. Survey of Nuclear Plant Systems. Environment and safety considerations; radiation protection.
Professor Paidoussis and Staff

• **305-527B COMPUTER-AIDED MECHANICAL DESIGN 3(3-1-5).** (Prerequisite: 308-208). Program structuring for efficiency in computer use and programming time; achieving interactive computing; using the computer in the engineering design process. Assignments include an optimization problem, a seminar, and development of one original program. Lecture topics include computational methods, computer graphics, contouring, curve-fitting, surface-fitting, network analysis, lever and kinematic systems. Program and subroutine listings also supplement text material.
Professor Pfeiffer

• **305-528A MANUFACTURING AUTOMATION 3(3-0-6).** An intergrated approach to discrete manufacturing systems based on the digital computer. Linking the manufacturing function to the computer-aided design function. Computer and direct numerical control of machine tools. Automated inspection, material handling and production control. Technological, social and economic aspects will be discussed.
Professor Hoffman

◎ **305-531B AEROELASTICITY 3(3-1-5).** (Prerequisites: 305-319B or 305-315A,B, and 305-533A). Wing divergence using strip theory aerodynamics. The effect of aircraft flexibility on the control and stability of the aircraft. Flutter calculations for two dimensional wings with discussion of three dimensional effects. Some examples of aeroelastic instability, and the relevant analysis of non-aeronautical type structures will also be given.
Professor Price

◎ **305-532B AIRCRAFT PERFORMANCE, STABILITY AND CONTROL 3(3-1-5).** (Prerequisites: 305-412A,B, 305-533A). Aircraft performance criteria such as range, endurance, rate of climb, maximum ceiling for steady and accelerated flight. Landing and take-off distances. Static and dynamic stability in the longitudinal (stick-fixed and stick-free) and coupled lateral and directional modes. Control response for all three modes.
Professor Price

◎ **305-533A SUBSONIC AERODYNAMICS 3(3-1-5).** (Prerequisite: 305-330A,B). Kinematics; equations of motion; vorticity and circulation; conformal mapping and flow round simple bodies. Two dimensional flow round aerofoils. Three dimensional flow; high and low aspect-ratio wings; airscrews. Wind tunnel interference. Similarity rules for subsonic irrotational flow. Supplemented by demonstrations and experiments in the laboratory.
Professor Newman

◎ **305-534A CONTINUUM MECHANICS I 3(3-0-6).** Mathematical preliminaries. The Cauchy and Piola stress tensors. Strain and deformation theory. Finite strains and deformation gradients. Rate of

deformation tensor. General theory of continuous media. Internal energy. Enthropy as a functional in continuum theory.
Professor Provan,

◎ **305-535B CONTINUUM MECHANICS II 3(3-0-6).** (Prerequisite: 305-534A). Constitutive theory and material symmetry. Three-dimensional Navier equation of motion. Classical elasticity and elastic potential theory. The Papkovich-Neuber Potential, Linear viscoelasticity. Metal plasticity and plastic constitutive equations. Linear thermoelasticity. The thermoelastic potential.
Professor Provan

• **305-550A PHYSIOMECHANICAL INSTRUMENTATION 3(2-2-5).** Basic instrument configuration. Discussion of transducers, amplifiers, filters, oscilloscopes, recorders, telemetry and high speed cinematography. Typical measurement systems and techniques used to obtain valid data in biomechanical and related research. Laboratory demonstrations and hands-on experiments to illustrate the subjects covered.
(Not open to engineering students)
Mr. Vroomen

305-551B PHYSIOMECHANICAL DATA ACQUISITION 3(2-2-5). On line biological data acquisition with reference to computers and computer programming. Transducers, interfaces, signal conditioning and transmission, data reduction and graphical presentation. Laboratory work based on current or planned students' research, where possible.
(Not open to engineering students)
Mr. Vroomen

◎ **305-553B ENVIRONMENTAL THERMAL ENGINEERING 3(3-1-5).** (Prerequisites: 305-341, 305-330, 305, 346 or equivalents) Review of thermodynamics and basic heat transfer. Refrigeration: vapour compression, refrigerants, absorption refrigeration, heat pumps; miscellaneous refrigeration processes (e.g. gaseous, thermoelectric); cryogenics. Psychrometrics: air properties, charts and measurements, transfer processes, extended coil heating and cooling. Solar radiation: flat plate and concentration collectors for solar energy conversion. Heat transmission in structures and solar radiation effects. Air conditioning calculations. Material drying.
Professor Forde

◎ **305-560B BIOMECHANICS OF TISSUES 3(3-0-6).** Tissues such as bone, tendon and ligament act to transmit load and together with the contractile ability of muscle, provide a means for locomotion. The course emphasizes the fundamentals of continuum mechanics in relation to the morphological classification of various tissues. Basic principles of viscoelasticity will aid the student in understanding the rate sensitivity of biological materials. The stress-strain-time or constitutive equations for soft connective tissue components will be determined. The mechanical response of muscle tissue in the passive and stimulated states will also be examined.
Professor Ahmed

◎ **305-561B BIOMECHANICS OF MUSCULOSKELETAL SYSTEMS 3(3-0-6).** The musculoskeletal system; general characteristics and classification of tissues and joints. Biomechanics and clinical problems in orthopaedics. Modelling of musculoskeletal systems. Passive and active displacements of components: fundamentals of 3-D kinematics, applications, measurement and interpretation techniques, case studies, load-bearing characteristics of muscuoskeletal systems: load-deformation properties of passive connective tissue, passive and stimulated muscle response, fundamentals of linear programming, optimization techniques and sensitivity analysis, experimental approaches, case studies.
Professor Ahmed

GRADUATE 600-LEVEL COURSES

Generally, undergraduate students are not permitted to enroll in graduate 600-level courses. However, in exceptional circumstances, the Faculty of Graduate Studies and Research does grant this permission upon the request of the Department on behalf of the student. A selected list of such courses is as follows:

305-610A FUNDAMENTALS OF FLUID DYNAMICS.

305-612B VISCOUS FLOW AND BOUNDARY LAYER THEORY.

305-621B ADVANCED MACHINING PROCESSES.

305-623A MACHINE TOOL ENGINEERING.

305-624A APPLIED PROCESS CONTROL.

305-626B ADVANCED CONCEPTS OF ENGINEERING DESIGN.

305-632A STRESS ANALYSIS.

305-633B TRIBOLOGY.

305-635B FRACTURE AND FATIGUE.

305-642A SYSTEM DYNAMICS.

305-643B VIBRATIONS IN ENGINEERING SYSTEMS.

305-645B FINITE ELEMENTS IN DYNAMIC SYSTEMS.

305-654A COMPUTATION OF FLUID FLOW AND HEAT TRANSFER.

5.7 DEPARTMENT OF MINING AND METALLURGICAL ENGINEERING

Chairman
J.E. Gruzleski, B.Sc., M.Sc. (Qu.), Ph.D.(Tor.), Eng.

Professors
W.G. Davenport, B.A.Sc., M.A.Sc.(U.B.C.), Ph.D.(Lond.), D.I. C., Eng.
R.I.L. Guthrie, B.Sc., Ph.D.(Lond.), D.I.C., Eng.
J.J. Jonas, B.Eng.(McG.), Ph.D.(Cantab.)
G.W. Smith, B.Eng., M.Eng., Ph.D. (McG.), Eng.
W.M. Telford, B.Sc., M.Sc., Ph.D.(McG.)
W.M. Williams, B.Sc., M.Sc.(Brist.), Ph.D.(Tor.), Eng.

Associate Professors
P.A. Distin, B.Sc., Ph.D.(Lond.), D.I.C.
J.A. Finch, B.Sc.(Birm.), M.Eng., Ph.D.(McG.), Eng.
O.G. Jensen, B.Sc., M.Sc., Ph.D.(U.B.C.)
R.R.MacLachlan, B.Eng. (McG.), M.Sc.(Qu.), Ph.D.(Qu.), Eng.
W.T. Thompson, B.A.Sc., M.A.Sc., Ph.D.(Tor.), Eng.
D. Trotter, B.Sc.(Qu.), M.Eng.(McG.), Eng.
J.E. Udd, B.Eng., M.Eng., Ph.D.(McG.), Eng.

Assistant Professors
M. Bilodeau, B.Eng., (Montr.), M.Sc., Ph.D. (McG.), Eng.
D.J.Crossley, B.Sc. (Newcastle-upon-Tyne), M.Sc., Ph.D. (U.B.C.)
A. Laplante, B.A.Sc., M.A.Sc., (Montr.), Ph.D.(Tor.), Eng.
N. Papanicolaou, Dip. Eng.(Athens), M.Sc. (McG.).
N. Rowlands, B.Sc., M.Sc., Ph.D. (Cardiff).
P. White, B.Sc. (Eng.) (Rand), M.Eng. (Penn. State).

Special Lecturers
R.S. Boire, T.E. Hawkins, P.J. Mackey

NSERC Research Associates
S. Argyropoulos, R. Harris, F. Mucciardi

The Department of Mining and Metallurgical Engineering offers programs leading to the Bachelor of Engineering degree in Mining Engineering or in Metallurgical Engineering. The first two semesters of each program are common and specialization in either Mining or Metallurgical Engineering begins in the third semester. The curriculum has been extensively redefined in recent years to take account of the new technology which has been developed both in the mining and the metallurgical industries. In addition to regular courses and laboratories, the curriculum includes seminars, colloquia, and student projects reinforced by field trips to metallurgical or mining operations throughout Ontario and Quebec.

The equipment operated by the Department is the best available. On the metallurgical side: an electron probe microanalyzer, and electron microscope; a computer-assisted automatic spectrometer; one of the largest university facilities in North America for melting and casting: computer facilities; X-ray diffraction machines; equipment for mechanical testing and deformation studies and a comprehensive range of analytical equipment. In mining: rock mechanics laboratories which include facilities for the testing of rocks under controlled conditions, a wide range of equipment for studying environmental factors of importance in mining (dust, illumination, ventilation, etc.), geophysical laboratories, and extensive facilities at the Institute of Occupational Health and Safety at Mont. St. Hilaire.

Metallurgical Engineering. Students of metallurgical engineering follow core courses in mineral processing, pyrometallurgy, hydrometallurgy, mechanical and physical metallurgy. These are supplemented by elective courses which provide a good choice of specialties to the graduating engineer. The course structure is reinforced with laboratory experiments, field trips and oral and written presentations in order to provide the most varied educational experience possible. The Department helps students in finding employment during the summer in order to complement their academic work with metallurgical practice. Graduates in Metallurgical Engineering find opportunities in the metal producing, metal processing or metal consuming industries and their jobs may involve them in research, development, operations or management.

Mining Engineering. McGill, which has provided a program in mining engineering for longer than any other university in Canada, has always been noted for the excellence of its mining courses and for the training it provides in mining technology, mineral economics and mining practice. The final year Mining Feasibility courses are an example of the advanced design which students are called upon to undertake as part of their training. Students are expected to obtain practical experience in the mining industry during the summer months and every aid is given to ensure this. Graduates in mining engineering are in demand not only in Canada but in other countries, particularly in Africa and Australia, which have large mining industries. Technical developments have been rapid in recent years. These offer a challenge to the imaginative student with a strong engineering interest.

Applied Geophysics. The Department offers introductory geophysics courses at the undergraduate level to interested students in the faculties of engineering and science. Following a first degree in a relevant subject area such as mining engineering, physics or geology, students can take a one year Graduate Diploma in Exploration Geophysics in this department. Full details may be obtained from the Department office.

Scholarships. The Department makes available twenty Entrance Scholarships, valued at $1,500, each year; these scholarships are renewable. A substantial number of other scholarships and bursaries are awarded by the Department as well as by the Canadian Mineral Industry Education Foundation. Full details may be obtained from the Department Office.

CURRICULUM FOR THE B.ENG. DEGREE IN METALLURGICAL ENGINEERING

REQUIRED COURSES		COURSE CREDIT	
Non-Departmental Subjects			
180-331A	Inorganic Chemistry of the Solid State	3	
186-221A	General Geology	3	
189-261A,B	Differential Equations I	3	
189-262A,B	Differential Equations II and Linear Algebra	3	
189-263A,B	Advanced Calculus	3	
189-264A,B	Introduction to Boundary Value Problems	3	
306-310A,B	Engineering Economy	3	
303-205A,B	Mechanics I	3	
304-281A,B	Electric Power	3	
305-293A	Graphics for the Minerals Industry	2	
305-346A,B	Heat Transfer	3	
308-208A,B	Computers in Engineering	2	34
Metallurgical Engineering Subjects			
306-201A	Introduction to the Mining Industry	3	
306-202A	Technical Report Preparation	1	
306-209B	Mathematical Applications in Mineral Engineering	3	
306-211B	Fundamentals of Metallurgical Engineering	3	
306-212B	Engineering Thermodynamics	3	
306-250B	Extractive Metallurgy I	3	
306-260B	Heat Treatment and Phase Transformations	3	
306-305B	Field Trip	1	
306-313A	Technical Report I	1	
306-317A	Instrumental Analysis	3	
306-340A	Applied Fluid Dynamics	3	
306-341B	Mineral Separation I	3	
306-351B	Electrometallurgy	3	
306-352B	Hydrometallurgy	3	
306-353B	Extractive Metallurgy II	3	
306-361B	Solidification and Casting	3	
306-362B	Strengthening, Deformation and Fracture	3	
306-414A,B	Technical Report II	2	
306-416B	Metallurgical Design	2	
306-442A	Modelling and Control of Mineral Processing Systems	3	
306-455A	Process Engineering Metallurgy	3	55
ELECTIVE COURSES			
Technical Electives			
Three courses which must be selected from courses offered by the Department, including at least one Project.			
306-443A,B	Mineral Separation Project	3	
306-444B	Concentrator Circuit Analysis	3	
306-445B	Mineral Separation II	3	
306-454A	Metallurgical Thermodynamics	3	
306-456B	Steelmaking Processes	3	
306-457A,B	Process Metallurgy Project	3	
306-458A	Corrosion Principles	3	
306-463A	Advanced Physical Metallurgy	3	
306-464A,B	Physical Metallurgy Project	3	9
Humanities or Social Science Electives			
Two courses			6
Total			**104**

CURRICULUM FOR THE B.ENG. DEGREE IN MINING ENGINEERING AND APPLIED GEOPHYSICS

REQUIRED COURSES		COURSE CREDIT	
Non-Departmental Subjects			
186-210A	Mineralogy	3	
186-221A	General Geology	3	
186-232B	Structural Geology	3	
186-440B	Mineral Deposits	3	
189-261A,B	Differential Equations I	3	
189-262A,B	Differential Equations II and Linear Algebra	3	
189-263A,B	Advanced Calculus	3	
189-264A,B	Introduction to Boundary Value Problems	3	
306-310A,B	Engineering Economy	3	
303-205A,B	Mechanics I	3	
303-207A,B	Solid Mechanics	4	
305-293A	Graphics for the Minerals Industry	2	
304-281A,B	Electric Power	3	
308-208A,B	Computers in Engineering	2	41
Mining Engineering Courses			
306-201A	Introduction to the Mineral Industry	3	
306-202A	Technical Report Preparation	1	
306-209B	Mathematical Applications in Mineral Industry	3	
306-211B	Fundamentals of Metallurgical Engineering	3	
306-212B	Engineering Thermodynamics	3	
306-216B	Mining Engineering Techniques	3	
306-305B	Field Trip	1	
306-321B	Behaviour of Rock Structures	3	
306-327A	Materials Handling	3	
306-328B	Mine Environments	3	
306-340A	Applied Fluid Dynamics	3	
306-341B	Mineral Separation I	3	
306-420A	Mining Feasibility Study I	3	
306-421B	Mining Feasibility Study II	3	
306-422A	Applied Explosives	3	
306-424B	Mineral Industry Economics	3	
306-425B	Mine Planning	3	
306-429D	Research Project	4	51
ELECTIVE COURSES			
Technical Electives			
Two courses to be chosen from those offered by the department or from other suitable graduate or undergraduate courses.			
306-332A	Mathematical Applications in Geophysics	3	
306-334B	Potential Theory in Geophysics	3	
306-414A	Technical Report II	3	
306-442A	Modelling & Control of Mineral Processing Systems	3	
306-443A,B	Mineral Separation Project	3	
306-444B	Concentrator Circuit Analysis	3	
306-445B	Mineral Separation II	3	
306-520A	Stability of Rock Slopes	3	
306-521B	Stability of Underground Openings	3	
306-522A	Geostatistical Mineral Reserve Assessment	3	
306-531A	Gravity and Magnetic Exploration Methods	3	
306-533B	Electrical Prospecting Methods	3	
306-535A	Seismology	3	
306-536B	Radioactive and Well Logging Methods	3	6
Humanities or Social Science Electives			
Two courses			6
Total			**104**
			77

For good students starting their B.Eng. studies in September 1981, a program which may be completed in six semesters is given below:

MINING AND METALLURGICAL ENGINEERING
(Common First Year)

	Semester 1 (Fall)	Credits		Semester 2 (Winter)	Credits
189-261A,B	Diff. Eq. I	3	189-262B,A	Diff. Eq. II and Lin. Alg.	3
189-263A,B	Advanced Calculus	3	189-264B,A	Boundary Value Prob.	3
186-221A	General Geology	3	306-209B	Math. App. in Min. Eng.	3
303-205A,B	Mechanics I	3	306-211B	Fund. of Metal. Eng.	3
306-201A	Intro. Minerals Industry	3	306-212B	Eng. Thermodynamics	3
306-202A	Technical Report Prep.	1	308-208B,A	Computers for Eng.	2
		16			17

METALLURGICAL ENGINEERING

	Semester 3 (Fall)			Semester 4 (Winter)	
180-331A	Inorganic Chemistry	3	305-346B	Heat Transfer	3
305-293A	Graphics for Min. Ind.	2	306-305B	Field Trip	1
306-250A	Extractive Metal. I	3	306-341B	Mineral Separation I	3
306-260A	Heat Treatment	3	306-352B	Hydrometallurgy	3
306-313A	Technical Report I	1	306-353B	Extractive Metal. II	3
306-317A	Instrumental Analysis	3	306-361B	Solidification and Casting	3
306-340A	Fluid Dynamics	3	-	Hum. or Soc. Sci.	3
		18			19
	Semester 5 (Fall)			**Semester 6 (Winter)**	
306-310A	Engineering Economy	3	304-281B	Electric Power	3
306-351A	Electrometallurgy	3	306-414B	Technical Report II	2
306-362A	Deformation	3	306-416B	Metallurgical Design	2
306-442A	Modelling & Control of Min.Proc.Sys.	3	-	Technical Electives	6
306-455A	Process Eng. Metallurgy	3	-	Hum. or Soc.Sci.	3
	Technical Elective	3			16
		18			

MINING ENGINEERING

	Semester 3 (Fall)			Semester 4 (Winter)	
186-210A	Mineralogy	3	186-232B	Structural Geology	3
300-310A	Engineering Economy	3	306-305B	Field Trip	1
303-207A	Solid Mechanics	4	306-321B	Rock Structures	3
305-293A	Graphics for Min. Ind.	2	306-327B	Materials Handling	3
306-216A	Mining Eng. Techniques	3	306-328B	Mine Environments	3
306-340A	Applied Fluid Dynamics	3	306-341B	Mineral Separation I	3
		18	-	Hum. or Soc.Sci.	3
					19
	Semester 5 (Fall)			**Semester 6 (Winter)**	
304-281A	Electric Power	3	186-440B	Ore Deposits	3
306-420A	Mine Feasibility	3	306-421B	Mine Feasibility II	3
306-422A	Applied Explosives	3	306-429B	Research Project	4
306-424A	Mineral Industry Economics	3	-	Technical Elective	3
306-425A	Mine Planning	3	-	Hum. or Soc.Sci.	3
	Technical Elective	3			16
		18			

COURSES OFFERED BY THE DEPARTMENT

The courses in this department have been renumbered to conform with the following classification system. The first three numbers (i.e. 306) are the department code. The next digit is the level of instruction. The last two digits are classified as follows:

01 to 09	elementary mining courses.
10 to 19	elementary and general metallurgical courses.
20 to 29	general mining courses.
30 to 39	geophysics courses.
40 to 49	mineral processing courses.
50 to 59	extractive and process metallurgy courses.
60 to 69	physical metallurgy courses.
70 to 79	seminars.

306-201A INTRODUCTION TO THE MINERAL INDUSTRY 3(3-3-3). Designed to introduce students to the concepts, theories, principles and practices employed by the Mining Industry in exploring for, evaluating, developing and exploiting economic mineral deposits. The economy, social and political environment in which the industry must operate is considered, and the latter's contribution to economic development and the attainment of national goals is outlined.
Professor Rowlands and Staff

306-202A TECHNICAL REPORT PREPARATION 1(1-0-2). To develop a knowledge of the requirements for effective communication of technical information. Guidelines for the preparation of engineering reports, technical papers, and verbal presentations. Students will be required to prepare short reports and a brief seminar on topics which will be selected by the instructor.
Professor Udd

306-209B MATHEMATICAL APPLICATIONS IN MINERAL ENGINEERING 3(3-2-4). (Co-requisite: 189-261A,B, 308-208A,B). Introduction to deterministic and stochastic modelling of mining and metallurgical engineering processes. Description and analysis of data distributions observed in mineral engineering applications; decision-making techniques in mineral engineering; modelling of metallurgical phenomena with linear and non-linear regression analysis; Taylor series applications; metallurgical mass balance adjustments.
(Not open to students who have taken 306-326).
Professors Bilodeau and Laplante

306-211B FUNDAMENTALS OF METALLURGICAL ENGINEERING 3(3-3-3). Raw materials, processes and products of metallurgical operations. Mineral processing: comminution including size classification, separation of minerals with emphasis on flotation, waste disposal. Extractive metallurgy: roasting, smelting, refining, hydrometallurgy, environmental protection. Physical metallurgy with emphasis on fabrication – casting, rolling, extrusion, forging and drawing. Laboratory experiments complement lecture material.
Professor Smith and Staff

306-212B ENGINEERING THERMODYNAMICS 3(3-1-5). Scope and nature of thermodynamics, classical versus microscopic approach. First Law, mechanical work and heat, applications to elastic deformation of solids, thermochemistry, elementary gaseous expansion processes. Second Law, Carnot cycle for ideal gas, Clausius inequality, application to simple power and refrigeration cycles. Helmholtz and Gibbs functions, application to simple chemical processes. Third Law and absolute entropy. Phase equilibrium for a pure substance. Chemical equilibrium, applications involving gaseous mixtures or ideal solutions.
Professor Thompson

306-215A,B MATERIALS SCIENCE 3(2-2-5). The economic significance of materials, their properties and limitations, methods of measurement of characteristic properties, importance of physical and mechanical properties in engineering applications, introduction to polymers and plastics, crystalline materials, metals, alloys and phase diagrams, solidification and subsequent thermal treatment of materials, heat treatment of iron-carbon alloys, industrial fabrication techniques such as rolling, extrusion, casting, forging, cold working.
Professors Gruzleski and Williams

306-216B MINING ENGINEERING TECHNIQUES 3(3-3-3). (Prerequisite: 306-201A). A study of mining engineering techniques and their application to the development of extractive methods for the exploitation of mineral deposits. Principles of surface and underground mining methods, ground stress and support approaches, use of pillars and fill systems, unit type local support, stoping and development methods, notes on mine surveying, slope stability, waste disposal. (Not given in 1981/82)
Professor MacLachlan

306-218A PRINCIPLES OF APPLIED THERMODYNAMICS 2(2-1-3). An introduction to the laws of classical thermodynamics with examples of their application to combustion processes, elastic deformation of pure materials, refrigeration and power cycles, and heterogeneous chemical equilibrium. (Not open to students in Mining and Metallurgical Engineering).
Professor Thompson

306-230B GEOPHYSICAL EXPLORATION 3(2-2-5). (Co-requisites: 189-261A,B, 189-263A,B or equivalents). Applications of seismic, gravity, magnetic, electrical and radioactive methods in petroleum and mineral exploration.
Professor Crossley

306-250B EXTRACTIVE METALLURGY I 3(2-3-4). (Prerequisites: 306-211A, 308-208A,B). An examination of some of the operations and processes of extractive metallurgy and the need for control through the application of chemical and

thermodynamic principles; stoichiometry and materials balances — ores, gangue minerals, fluxes and slags; enthalpy and heat balances — fuels, flame temperatures, operating temperatures, heat losses, refractories; free energy and process equilibria, process variables and their interactions, optimum conditions. (Not given in 1981/82).
Professor Smith

306-260B HEAT TREATMENT AND PHASE TRANSFORMATIONS 3(2-3-4). (Prerequisite: 306-211A*). Precipitation, eutectoid reactions, austenite-martensite reaction, bainite formation, recovery, recrystallization, grain growth, secondary recrystallization. Industrial heat treatment of ferrous and non-ferrous metals based on these transformations. (Not given in 1981-82).
Professor Williams

306-305B FIELD TRIP 1(0-0-3). (Prerequisites: 306-201A, 306-211B). This course will consist of an organized field trip of one week's duration to a number of operating mines and mineral processing plants in Eastern Canada. Students will be required to submit a comprehensive report on the trip.
Staff

306-310A,B ENGINEERING ECONOMY 3(3-2-4). Basic concepts of economic analysis. Accounting methods, Marginal analysis, Cash flow and time value. Investment opportunity analysis Expected value analysis techniques. Risk analysis. Analysis of new plant investment opportunities. Economic analysis of research and development.
Profs. Papanicolaou, Bilodeau and White

306-313A TECHNICAL REPORT I 1(0-0-3). A technical paper prepared in accordance with instructions from the Department.
Professor Gruzleski

306-317A INSTRUMENTAL ANALYSIS 3(2-3-4). (Prerequisite 180-331A**). Methods of sample preparation, UV and visible spectrophotometry, infra-red spectrophotometry, flame and atomic absorption spectrophotometry, emission spectroscopy, electro-deposition and coulometry, polarography, potentiometric titrations, gas chromatography, Leco train analysis, X-ray diffraction and fluorescence spectroscopy, radiotracer techniques.
Professor Finch

306-321B BEHAVIOUR OF ROCK STRUCTURES 3(3-3-3). (Prerequisites: 186-232A, 303-207A,B, 306-216B). Summary of the contributions made by various disciplines to the field of rock mechanics, the state of present knowledge, application of basic principles to problems involving the design of competent structures in rock masses.
Professor Udd

306-327A MATERIALS HANDLING 3(3-3-3). (Prerequisite: 306-216B). A study of the factors involved in the selection of methods for handling ores, raw materials, and other resources. Materials handling systems for underground and open cut mines, transportation of materials, comparative studies of alternative systems for selected cases, capital and operating costs of equipment.
Professor Trotter

306-328B MINE ENVIRONMENTS 3(3-3-3). (Prerequisites: 306-201A, 306-340A). The major elements of the course involve the characteristics of air contaminants, pathogenesis of pneumoconiosis, problems of noise and vibrations, principles of illumination and underground lighting, mine ventilation systems, and design features of dust control and make-up air supply systems. Candidates will prepare a technical paper on a selected topic.
Professor Rowlands

◎ **306-332A MATHEMATICAL APPLICATIONS IN GEOPHYSICS 3(2-3-4).** (Prerequisites: 306-230, 189-262, 189-264, or equivalents). Techniques in the treatment of geophysical data including Fourier analysis, power-spectral analysis, linear filtering, least-squares and other modelling procedures. Emphasis is on numerical problems in data processing.
Professor Crossley

◎ **306-334B POTENTIAL THEORY IN GEOPHYSICS 3(2-3-4).** (Prerequisite: 306-332A and/or consultation with instructor). Applications of potential theory to gravity, magnetic and resistivity modelling. Includes ambiguity and uniqueness of potential field data, computation of anomalies from simple bodies and use of characteristic curves. Numerical methods are highlighted.
Professor Jensen

306-340A APPLIED FLUID DYNAMICS 3(2-3-4). (Prerequisite: 303-205A,B**). Total energy balance, mechanical energy balance, viscosity, friction, Newtonian and non-Newtonian flow. Pipes, valves and fittings, compressible flow, and draft. Flow through stacks and ventilation ducting, compressors, fans and blowers. Measurement of flow and pressure. Flow of solids through fluids, slurry transport (settling and non-settling), classification, thickening, filtering, fluidization, and cyclones.
Professor Guthrie

306-341A MINERAL SEPARATION I 3(2-3-4). (Prerequisites: 306-201A or 306-211A). General discussion of minerals and ores. Size reduction and liberation. Screening and particle size determination. Handling of solids and pulps. Fundamentals of mineral concentration. Gravity, chemical, electrical, magnetic, and electrostatic separations. Introduction to cyanidation and flotation.
Professor Finch

306-351B ELECTROMETALLURGY 3(2-3-4). (Prerequisite: 306-212A). Coulometry. Conductance and transference in electrolytes. Thermodynamics of electrolyte solutions. Electrochemistry of reversible cells, electrode potentials. Pourbaix diagrams: application to corrosion, leaching and elec-

trodeposition. Irreversible electrode processes: application to corrosion and electrodeposition.
Professor Thompson

306-352A HYDROMETALLURGY 3(2-3-4). (Prerequisite: 306-211A). Unit processes in hydrometallurgy: acid, alkaline and pressure leaching methods. Thermodynamic and kinetic aspects. Purification of leach liquors by ion exchange, solvent extraction and selective precipitation operations. Solid-liquid separation techniques. Recovery of metal values by cementation, electrowinning, and hydrogen precipitation methods. Contemporary plant design incorporating the above principles.
Professor Distin

306-353B EXTRACTIVE METALLURGY II 3(2-3-4). (Prerequisite: 306-250B). Equilibrium phase diagrams, phase separation. Non-equilibrium solidification, zone refining. Thermodynamics of metal reduction, roasting, refining processes, reaction efficiencies. Physical and chemical aspects of oxide slags and refractories. Analysis of developments in the production of lead, zinc, copper, and nickel. Metallurgy of the less common metals.
Professor Distin

306-361B SOLIDIFICATION AND CASTING 3(2-3-4). (Prerequisite: 306-211A*). Nucleation and grain refinement, freezing of pure metals, solute redistribution during solidification, constitutional undercooling, dendritic freezing, segregation phenomena, the freezing of gray, white, and nodular cast iron, malleable iron, industrial casting techniques, ingot structures.
Professor Gruzleski

306-362B STRENGTHENING, DEFORMATION AND FRACTURE 3(2-3-4). (Prerequisite: 306-211A*). Strengthening of metals by: work hardening, grain size refinement, sub-structure strengthening, solute, precipitate, dispersion, order and martensitic hardening. Practical implications. Service failure and prevention, mechanisms of brittle and ductile fracture, creep and fatigue. Industrial shaping and forming, theories and processes.
Professor Jonas

306-367B METALLURGY OF ENGINEERING MATERIALS 3(2-3-4). (Prerequisites: 306-215A,B or 303-291B). Methods of measurement of metallurgical properties: X-ray methods, electron microscope and microprobe analysis. Alloy properties and designations. Property control in ferrous and non-ferrous materials: heat treatment, work hardening. Surface hardening methods. Joining techniques: soldering, brazing, welding, weldability, weld inspection, weld defects. Casting methods, casting design. Hot working techniques. Cold forming methods, design considerations. Powder metallurgy. Corrosion: corrosion protection, case histories in corrosion. Failure analysis.
Professor Gruzleski

306-414A,B TECHNICAL REPORT II 2(0-0-6). (Prerequisite: 306-313A). A technical paper prepared in accordance with instructions from the Department, together with oral presentation.
Professor Gruzleski

306-416B METALLURGICAL DESIGN 2(2-0-4). (Prerequisite: Satisfactory completion of the required courses in the relevant areas of the Metallurgical Engineering program. Departmental approval is necessary). Design of new metallurgical plants, processes and products based on knowledge acquired in previous core courses. Material and heat balances, metal economics, design and optimization.
Dr. Mackey

306-420A MINING FEASIBILITY STUDY I 3(0-3-6). (Prerequisites: 186-232A, 306-341B, 306-327A, 306-326B, 306-328B). The course is a case study exercise in application of the specialist skills developed in the mining engineering program. The purpose of the course is to combine these skills in carrying out an appraisal of the technical feasibility and economic attractiveness of developing a mineral deposit, based on the results of an exploration program, and to select the most attractive alternative. Staff members are available for individual consultations and for the presentation of seminars as required. Students may be required to present seminars on aspects of the case study analysis. Final individual reports are to be prepared to professional standards. Individual interpretations are encouraged.
Professor Bilodeau and Staff

306-421B MINING FEASIBILITY STUDY II 3(0-3-6). (Prerequisite: 306-420A). Based on the results of 306-420A, students are required to complete the preliminary design and feasibility study of themining system. Staff members are available for individual consultations and for the presentation of seminars as required. Students are required to present seminars on aspects of the case study analysis. Final individual reports are to be prepared to professional standards. Individual interests are encouraged and wide latitude of content is permitted in the preparation of the reports.
Professor MacLachlan and Staff

◎ **306-422A APPLIED EXPLOSIVES 3(2-3-4).** The course is designed to introduce the engineering aspects of explosives relevant to their use in rock and ground excavation. The concepts of fuel-oxidizer mixes and the principles of various formulations such as dynamite slurries and dry mixes are reviewed. The concept of detonation and the physical factors related to detonation that govern the performance of many commercial explosive formulations are discussed. Initiation systems, blast damage and vibration control, blasting frozen ground, tunnelling and other topics are included. Basic concepts in drilling and blast patterns are presented. Legislation regarding explosives transport, handling, and storage is reviewed. The course is rein-

forced by special field trips to selected laboratories and work sites.
Professor MacLachlan

306-423A MINERAL INDUSTRY ECONOMICS I 3(3-0-6). (Prerequisite: 306-201A). Incorporation procedures, company direction and directorships, cost accounting and controls, company law, financial statements, federal taxation.
Professors Bilodeau, White and Mr. Boire

306-424B MINERAL INDUSTRY ECONOMICS II 3(3-0-6). (Prerequisite: 306-423A). Applications of economic analysis for corporate planning and the structuring of mineral policy in government organizations. The mineral conversion process, the mine in economic theory, Canadian mineral policy, case studies in mining company organization and planning.
Professor White

◎ **306-425B MINE PLANNING 3(3-3-3).** Planning for the exploitation of a mineral deposit: exploration; choice of mining method and mining rate; design of access and services; safety; scheduling and sequencing of mining procedures. Economic analysis.
Professor Trotter

306-429A,B MINING RESEARCH PROJECT 4(0-2-10). (Requisite depending upon topic chosen). To develop an understanding of independent study and research methods including problem definition, selection of approach, problem of solution, and communication of results. Research topics, which may be principally experimental, theoretical, or involve a critical review of the literature, will be chosen in consultation with individual staff members who will act in a supervisory capacity throughout the project.
Professor Udd and Staff

306-442A MODELLING AND CONTROL OF MINERAL PROCESSING SYSTEMS 3(2-3-4). (Prerequisite: 306-341B). Mathematical modelling and computer control of mineral processing circuits. Modelling of the effet of flowrate and composition changes on surge tank performance. Modelling of grinding kinetics, residence time distributions and internal classification in rod and ball mills. Modelling of hydrocyclones. Modelling of batch and continuous flotation. Stabilizing control of grinding circuits: regulation of circulating loads and classification conditions. Stabilizing and optimizing control of flotation circuits: case studies.
Professor Laplante

◎ **306-443A,B MINERAL SEPARATION PROJECT 3(0-6-3).** (Prerequisites: 306-340A, 306-442A). Ore samples will be given to groups of students to study possible methods of concentration. Open circuit feasibility tests and locked (or cycle) tests will be conducted to evaluate batch and continuous circuits. Economic feasibility of the ore deposit will have to be established and completed with a concentrator design.
Professor Finch and Staff

◎ **306-444B CONCENTRATOR CIRCUIT ANALYSIS 3(2-3-4).** (Prerequisite: 306-442A). Preliminary mill design, flowsheet evaluation and concentration circuit analysis. Pulp density relationships, flow of pulp, flow of solids and liquids through a circuit. Design of unit operations in series and in parallel. Circuit controls. Tailing disposal in relation to pollution and environmental control. (Not given in 1981-82).
Professor Smith

306-445B MINERAL SEPARATION II 3(2-3-4). (Prerequisite: 306-341B). A course designed to introduce statistics, as applied to experimental design, modelling, and mass balancing; and mathematical simulation of mineral processing systems. Statistics: sampling, tests of significance, linear regression, calibration models, experimental design, optimization. Mathematical simulation: mass balancing, data adjustment, models of grinding, classification, liberation, flotation, magnetic separation, and circuit simulation.
Professor Laplante

◎ **306-454A METALLURGICAL THERMODYNAMICS 3(2-3-4).** (Prerequisite: 306-212A). Binary metallic solution: relationships between partial molar properties, limiting laws, regular solutions and microscopic interpretation of partial molar quantities. Heterogeneous equilibria in binary systems and activity data approximations from phase diagrams. Ternary phase diagrams in systems where only one phase has variable composition. Dilute ternary and multi-component systems, interaction parameters. Concentrated ternary solutions, graphical Gibbs-Duhem integrations.
Professor Thompson

306-455A PROCESS ENGINEERING METALLURGY 3(3-1-5). (Prerequisites: 305-346A*, 306-212A). Analysis of processes involved in the winning, refining and treatment of metals with special emphasis on transport phenomena. Fick's Laws, interfacial equilibria, single and multicomponent mass transfer operations. Convective systems. Topochemical reactions. Dimensional analysis, pilot plants and modelling. Characteristics of linear and well-mixed reactors, tracer techniques.
Dr. Mucciardi

◎ **306-456B STEELMAKING PROCESSES 3(2-2-5).** (Prerequisites: 306-353B*, 306-455A*). Physicochemical, kinetic and economic aspects of the following: iron-making in blast furnaces, sintering operations, coke-making and steelmaking in electric, basic oxygen and open-hearth furnaces. Survey of associated pollution emissions and current abatement methods.
Professor Guthrie

◎ **306-457A,B PROCESS METALLURGY PROJECT 3(0-6-3).** (Prerequisites: 306-351B, 306-352B, 306-353B. Co-requisite: 306-455A). A wide variety of experimental projects in process metallurgy, covering the fields of hydro-, electro-, pyro-, and chemi-

cal metallurgy will be suggested by staff (or students) for detailed investigation and evaluation.
Professor Distin and Staff

◎ **306-458A CORROSION PRINCIPLES 3(2-3-4).** Review of principles of metal oxidation in aqueous and non-aqueous environments with special reference to corrosion. Structure, properties, kinetics and growth mechanisms of oxide films, stress corrosion, corrosion fatigue, hydrogen embrittlement, carbide precipitation, cavitation, anodic and cathodic protection, protective coatings. Use of non-metallic materials. Corrosion in industrial processes, soils, and marine environments. Corrosion testing methods. Corrosion as a factor in design and selection of materials.
Professor Distin

◎ **306-463A ADVANCED PHYSICAL METALLURGY 3(2-2-5).** (Prerequisites: 306-260B, 306-361A, 306-362B . A lecture and discussion course dealing with the physical metallurgy, properties and applications of the less common metallic materials, e.g.: stainless steels, superalloys, refractory metals, high strength low alloy steels.
Staff

◎ **306-464A,B PHYSICAL METALLURGY PROJECT 3(0-6-3).** (Prerequisites: 306-260B, 306-361A, 306-362B). An experimental or theoretical project, based partly on the student's interests, on some topic in physical metallurgy, e.g. in solidification, deformation, heat treatment, alloying, instrumentation, powder metallurgy, joining processes.
Professor Williams and Staff

◎ **306-520A STABILITY OF ROCK SLOPES 3(2-3-4).** (Prerequisite: permission of instructor). The properties of rock masses and of structural discontinuities. Influence of geological structure on stability. Linear, non-linear, and wedge failures. Site investigations. Methods of slope stabilization.
Professor Udd

◎ **306-521B STABILITY OF UNDERGROUND OPENINGS 3(2-3-4).** (Prerequisite: permission of instructor). The properties of rock masses and stability classification systems. The influence and properties of geological structural features. Stability related to the design of underground openings and mining systems. Site investigations. Methods of stabilization.
Professor Udd

◎ **306-522A GEOSTATISTICAL MINERAL RESERVE ASSESSMENT 3(3-3-3).** (Prerequisites: 308-208A,B or equivalent, 306-326B or equivalent). Introduction and review of conventional grade and tonnage assessment techniques; elementary statistical theory and its contribution to mineral reserve problems; the variogram and its applications; the computation of estimation variances; the practice of kriging; grade-tonnage curves; mineral deposit modelling; mineral industry applications.
Professor Bilodeau

306-523B STATISTICAL AND ECONOMIC APPLICATIONS IN MINERAL EXPLORATION PLANNING 3(3-2-4). (Prerequisites: 300-310A,B, 308-208A,B, or equivalents). Application of statistical and economic analysis techniques in planning mineral exploration strategies. Introduction to probabilities and statistics; statistical decision theory; regional mineral resource appraisal; exploration economics and strategies; grade-tonnage estimation techniques; establishing minimum acceptable exploration targets; guidelines for finding and acquiring mineral deposits; delineation investment decisions.
Professor Bilodeau

◎ **306-531A GRAVITY AND MAGNETIC EXPLORATION METHODS 3(2-3-4).** (Prerequisite: 306-230B or equivalent and consultation with instructor). Applications of gravity and magnetic methods in petroleum and mineral exploration with particular emphasis on instruments, field methods and interpretation of results.
Professor Telford

◎ **306-533B ELECTRICAL PROSPECTING METHODS 3(2-3-4).** (Prerequisite: 306-230B or equivalent and consultation with instructor). Applications of electrical methods in petroleum and mineral exploration with particular emphasis on instruments, field operations and interpretation of results.
Professor Telford

◎ **306-535A SEISMOLOGY 3(2-3-4).** (Co-requisite: 306-332A or equivalent and consultation with instructor). Theory of seismic wave propagation, application of seismology in petroleum and mineral exploration: instrumentation, data acquisition, analysis and interpretation.
Professor Jensen

◎ **306-536B RADIOACTIVE AND WELL LOGGING METHODS 3(2-3-4).** (Prerequisite: 306-230B and consultation with instructor). Seismic methods in mineral exploration and engineering geophysics. Radioactivity method, instrumentation and interpretation of results. Well logging techniques with particular emphasis on instrumentation, interpretation of petroleum well logs, applications in mineral exploration areas.
Professor Telford

5.8 SCHOOL OF COMPUTER SCIENCE

Director
M.M. Newborn, B.E.E. (Renss.), Ph.D. (Ohio State)

Professors
W.D. Thorpe, M.A.(Cantab.)

Associate Professors
D.J. Burrage, B.A. (Cantab.), M.Sc. (Brun.)
V. Chvatal, M.A. (Charles), Ph.D. (Wat.)
L. Devroye, M.S. (Louvain), Ph.D. (Texas)
T.H. Merrett, B.Sc.(Qu.), D.Phil.(Oxon.)
C.C.Paige, B.Sc.(Sydney), Ph.D.(Lond.)
G.F.G. Ratzer, B.Sc.(Glas.), M.Sc.(McG.)
G.T. Toussaint, B.Sc. (Tulsa), Ph.D. (U.B.C.)

Assistant Professors
D. Avis, B.Sc.(Wat.), Ph.D.(Stan.)
N. Friedman, B.A.(W.Ont.), Ph.D.(Tor.)
R.N. Horspool, B.A (Cantab.), Ph.D.(Tor.)
D. Therien, B.Sc.(Mont.), Ph.D.(Wat.)
G. Cormack, B.Sc., Ph.D. (Man.)

Lecturers
A. Greenberg, B.Sc.(McG.), M.Sc.(McG.)
B. Bhattacharya, B.Sc. (Calcutta), M.Sc., Ph.D.(McGill)

Postdoctoral Fellows
L. Goldfarb, Dip. (Leningrad), Ph.D.(Wat.)
G. Hahn, B.Sc., M.Sc. (S.Fraser), Ph.D. (McMaster)

Computer Science is a field with a short history of only forty years but with a future that will stretch the imagination. The creators of electronic calculating machines during World War II solved many scientific computational problems, and rapid growth of computational numerical analysis followed. Mathematical techniques found applications beyond scientific and engineering problems, creating the new field of operations research. Computers began to be put to uses of such complexity that describing the problems became more difficult than the computations themselves. Instructing the computer became the specialized discipline of programming. Programmers needed languages to communicate with the machine and operating systems to control it, and the field of software was born. The discovery of non-numerical uses of computers led to fields as diverse as large scale data processing, information retrieval and artificial intelligence. On the theoretical side, the problems and applications of computers have created areas of study in the theory of formal languages, the theory of automata and the theory of computation.

Undergraduate courses in the School of Computer Science provide the fundamentals necessary for careers in this field. Students with undergraduate training in Computer Science have available a wide range of job opportunities. They are needed, for example, to help automate libraries, the postal system, traffic flow, assembly line processes and medical record keeping.

Undergraduate courses also provide the background necessary for graduate study in Computer Science. Courses in the theoretical aspects of programming, data bases and information structures, computer systems architecture and organization, compiler theory and heuristic programming are available as electives for engineering students. Students interested in the Minor in Computer Science should consult Section 6 of this Announcement.

The School also offers an undergraduate Honours Program, a Minor, and a Faculty Program (in Mathematics and Computer Science) in the Faculty of Science. These programs are described in that Faculty's Announcement.

An Amdahl V7 computer provides batch and time-sharing services to McGill students. The school has a PDP11/45, a PDP11/20, a Data General Nova Multiprocessing system consisting of five Nova computers, a Cromenco Z-80 microcomputer and several other small systems available to advanced students.

COURSES OFFERED BY THE SCHOOL

N.B. All of the following courses are introductory and not more than one of them may be taken for credit:

308-100	Primarily for Arts and Education students
308-200	Scientific Computing, based on FORTRAN
308-202	General introductory course, based on PASCAL. Recommended for students in C.S. Minor or Math/C.S.faculty program
308-208	Restricted to Engineering students
308-220	Primarily for students of Biology, Psychology and Social Sciences.

Note that continuation to other computer science courses is possible only from 308-200, 308-202, 308-208, or 308-220.

308-100B INTRODUCTION TO COMPUTING 3(1-2-6). An introduction to applications and general concepts of computing; introduction to programming using a selection of features of the programming language FORTRAN. This course is not available to Engineering students.
Professor Avis

308-200A,B INTRODUCTION TO COMPUTER SCIENCE 3(3-0-6). (Prerequisite: 189-121 or equivalent). Number systems; data representation; algorithm design; FORTRAN; computer methods including searching, sorting, solution of equations, numerical integration and matrix manipulation. This course is not normally available to Engineering students, who must take either 308-208 or 304-221A, depending on their departmental requirements.
Professors Friedman and Ratzer

308-202A,B FUNDAMENTALS OF COMPUTING I 3(3-0-6). (Prerequisite: 189-221 or equivalent). The structure and design of computer algorithms. Implementation of algorithms in a modern high-level language (normally Pascal). Representation of data and simple data structures. Application of computers to solving both numerical and non-numerical problems. Relationship with FORTRAN. FORTRAN as a second programming language.
Professor Friedman

308-208A,B COMPUTERS IN ENGINEERING 2(2-1-5). (Prerequisites: Differential and integral calculus. Co-requisite: linear algebra: determinants, vectors, matrix operations). An introduction to computing and discussion of computing methods for engineering problems. Machine language; FORTRAN; numerical methods (roots of equations, quadrature, simultaneous linear equations, differential equations); use of library subroutines.
Professors Merrett and Cormack

308-210A,B COMPUTER STRUCTURE AND ASSEMBLY LANGUAGE PROGRAMMING 3(3-0-6). (Prerequisite: 308-200 or 308-208). Computer structure, machine language, instruction execution, addressing techniques, and digital representation of data. Symbolic coding and assembly language systems, macro definition, program segmentation and linkage. (A student cannot take both 308-210 and 308-273).
Professors Ratzer and Devroye

308-220B DIGITAL COMPUTING FOR STATISTICAL ANALYSIS 3(3-0-6). (Prerequisite: 166-350A, 189-231A, 204-204A or equivalent). The course introduces the student to computers and to their uses in the solution of statistical problems. Number systems, data representation, characteristics of a high-level programming language (FORTRAN). Methods of computer solution of statistical problems, random numbers, games of chance, simulation.
Staff

308-230B COMPUTERS IN DATA PROCESSING 3(3-0-6). (Prerequisite: 308-200 or equivalent). Uses of computers for data processing, COBOL; job control language; system utility programs; file processing; comparison of languages in business-oriented applications.
Professor Burrage

308-250A INTRODUCTION TO COMPUTER SCIENCE 3(3-0-6). An introduction to concepts in the design of computer algorithms, including basic data structures, analysis of algorithms, establishing correctness of programs and program testing. A high level programming language will be studied and students will implement solutions to specific problems encountered in computer science. (This course is intended for Honours Computer Science students.
Professor Devroye

308-273A,B INTRODUCTION TO SMALL COMPUTERS 3(3-0-6). (Prerequisite: 308-200 or 308-208). Organisation and architecture of small computers. Programming for small computers. Assemblers, cross-assemblers and simulators. Addressing techniques. Interrupts. Input and output programming and devices. Simple data structures. System support macros and software. (Not open to students who have taken or are taking 308-210).
Staff

308-300A,B PROGRAMMING LANGUAGES 3(3-0-6). (Prerequisite: 308-210 or 308-273 or 304-221). A study of programming languages including PL/1, and two from APL, LISP, and SNOBOL. Computer solution of non-numerical problems. (A student cannot take both 308-300 and 308-302).
Professor Thorpe

308-302B A COMPARATIVE STUDY OF PROGRAMMING LANGUAGES 3(3-0-6). (Prerequisite: 308-210 or 308-273 or 304-221). A study of high-level programming language features and concepts including: scope and life-time rules, type checking, parameter passing, recursive procedures, records, modules, structured programming and program reliability. The student will be required to run programs in at least three of the languages covered. These languages will include FORTRAN, PL/I, ALGOL, PASCAL, SIMULA 67, SNOBOL, LISP and APL. (A student cannot take both 308-300 and 308-302).
Professor Horspool

308-305A COMPUTER SYSTEM ARCHITECTURE 3(3-0-6). (Prerequisite: 308-210 or 308-273 or 304-221). A functional description of computer hardware. Hardware concepts and current technology. Memories, buffers, memory hierarchies and dynamic address translation. CPU characteristics, performance factors, overlap, parallel and pipeline systems. Microprogramming. Interrupt mechanism and clocks. Channels, control units, input devices including telecommunication equipment.
Mr. Greenberg

308-310B COMPUTER SYSTEMS AND ORGANIZATION 3(3-0-6). (Prerequisite: 308-305). Control and scheduling of large information processing systems. Operating system software — resource allocation, dispatching, processors, access methods, job control languages, main storage management. Batch processing, multiprogramming, multiprocessing, time sharing.
Staff

308-315A,B INFORMATION STRUCTURES 3(3-0-6). (Prerequisite: 308-210 or 308-273 or 304-221, (Students with a high grade in 308-200 or 308-208 may be permitted to register). Introduction to basic types of data structures, their theoretical properties and some of their applications. Contents: storage of arrays, applications to special matrices and scientific computation; queues and stacks, applications to compiler writing; sorting and searching; introduction to list processing and symbolic manipulation. Students are expected to write

and run their own programs. (A student cannot take both 308-315 and 308-317).
Professors Avis and Friedman

308-317B INFORMATION STRUCTURES 3(3-0-6). (Prerequisites: 308-202A). Basic data structures. Representation of arrays, stacks and queues. Linked lists and their applications. Representation and application of binary trees. Internal sorting. Graph representation. Graph algorithms. This course will assume knowledge of a high-level language such as PASCAL or ALGOL W. (A student cannot take both 308-317 and 308-315).
Professor Merrett

308-350A,B NUMERICAL ANALYSIS 3(3-1-5). (Prerequisites: 189-262 or 189-267, 308-208, 308-200 or 308-220). Solution techniques for linear, simultaneous, algebraic equations; iterative methods for the solution of nonlinear equations, interpolation and curve fitting, numerical integration by interpolative and quadrature methods, numerical integration of systems of differential equations, including initial value and boundary-value problems, relationship of differential equations to the eigenvalue problem, the matrix eigenvalue problem and its solutions.
Professors Bach (Mechanical Engineering) and Burrage

308-400A,B TECHNICAL PROJECT AND REPORT 3(0-3-6). (Prerequisite: U3 standing with C.S. Minor). A computer related project, typically a programming effort, along with a report will be carried out in cooperation with a staff member in the School of Computer Science.
Professor Chvatal

308-405B ALGORITHMS AND THEIR ANALYSIS 3(3-0-6). (Prerequisites: 189-343 and 308-315 or 308-317). An introduction to techniques for the analysis of algorithms and basic methods of improving their efficiency. Various problems from engineering applications and computer science will be selected and efficient algorithms developed for their solution. Assignments in the course will include analysis of algorithms and design and implementation of algorithms in suitable high level programming languages.
Professor Chvatal

308-415B INTRODUCTION TO COMPILER DESIGN 3(3-0-6). (Prerequisites: 308-315 or 308-317; and 308-300 or 308-302). The structure of a compiler. Lexical analysis. Basic parsing techniques. Syntax directed translation. Run-time implementation of various programming language constructs. Introduction to code generation and optimization. Students will be expected to implement parts of a compiler.
Professor Friedman

308-420A FILES AND DATA BASES 3(3-0-6). (Prerequisite: 308-230 and 308-315 or 308-317). Language essentials for file processing; data sets, files and job control language; sequential files; printing, sorting, updating, indexed sequential files; direct files; files of structured data. (Not open to students who have taken 308-320).
Professor Burrage

308-421B INTRODUCTION TO DATABASE SYSTEMS 3(3-0-6). (Prerequisite: 308-420A). Database concepts. The relational, hierarchical and network models of data. Use and implementations of the three data models. Data description languages. Data Manipulation languages. Security, integrity and concurrency problems in databases.
Professor Burrage

308-424A TOPICS IN ARTIFICIAL INTELLIGENCE I 3(3-0-6). (Prerequisites: 308-315 or 308-317 or permission of the instructor). Introduction to search methods in AI problems. Automatic theorem proving techniques, symbolic integration, game playing by computers, the minimax and alpha-beta algorithms, and heuristic approaches to the travelling salesman problem. (Not open to students who have taken 308-425 before 1977-78).
Professor Newborn

308-425B TOPICS IN ARTIFICIAL INTELLIGENCE II 3(3-0-6). (Prerequisites: 308-315 or 308-317 or permission of instructor). This course is an introduction to various concepts in AI. Contents: Neural information processing; picture processing; parametric, nonparametric; supervised, and unsupervised learning; pattern recognition programs; Bayesian decision theory; scene analysis; philosophical and psychological aspects of AI; implications of AI for the sciences, arts and society.
Professor Toussaint

308-530A FORMAL LANGUAGES 3(3-0-6). (Prerequisites: 308-415, 189-251 or permission of instructor). The definition of a language. Grammars. Finite automata and regular languages. Context free languages. Pushdown automata. Turing machines and undecidable problems. Context sensitive and phrase-structure languages.
Professor Therien

308-540A MATRIX COMPUTATIONS. 3(3-0-6). (Prerequisite: 189-327 or 308-350). Designing and programming reliable numerical algorithms. Stability of algorithms and condition of problems. Reliable and efficient algorithms for solution of equations, linear least squares problems, the singular value decomposition, the eigenproblem and the generalized eigenproblem. Perturbation analysis of these problems. Special cases: symmetric matrices, positive definite matrices, structured matrices.
Professor Paige

308-566A COMPUTER METHODS IN OPERATIONS RESEARCH I 3(3-0-6). (Prerequisites: 308-315 or 308-317, 189-251 or equivalent). Use of the computer in solving deterministic problems in operations research. Linear programming and extensions. Efficient methods for large problems. Transportation problems. Network models.
Professor Paige

308-567B COMPUTER METHODS IN OPERATIONS RESEARCH II 3(3-0-6). (Prerequisites: 189-356, 308-566 or equivalent). Use of the computer in solving problems in operations research with emphasis on probabilistic problems. Dynamic programming. Markov decision processes. Inventory models. Waiting line models. Computer simulation.
Professor Chvatal

308-573A,B MINI-COMPUTERS 3(3-0-6). (Prerequisite: 308-210 or 308-273 and permission of instructor). Characteristics and internal structure of micro and mini-computers. Theoretical concepts and properties of assemblers, loaders and simulators. Assembler and machine languages for small computers. System software. Applications for small computers. Students will be assigned "hands-on" projects.
Professors Ratzer

308-610A INFORMATION STRUCTURES I

308-611B INFORMATION STRUCTURES II

308-612A DATABASE SYSTEMS

308-614A COMPUTER METHODS IN SYSTEMS ANALYSIS I

308-615B COMPUTER METHODS IN SYSTEMS ANALYSIS II

308-616A ORGANIZATION AND RETRIEVAL OF DATA

308-617B INFORMATION SYSTEMS

308-620A PROGRAMMING LANGUAGES AND COMPILERS

308-621B THEORETICAL ASPECTS OF COMPILER CONSTRUCTION

308-624A HIGH-LEVEL COMPUTER LANGUAGES I

308-625B HIGH-LEVEL COMPUTER LANGUAGES II

308-627B THEORY OF PROGRAMMING AND PROGRAMMING METHODOLOGIES

308-631B THEORY OF ALGORITHMS AND COMPUTATIONAL COMPLEXITY

308-640A NUMERICAL ALGORITHMS I

308-641B NUMERICAL ALGORITHMS II

308-644A PATTERN RECOGNITION I

308-645B PATTERN RECOGNITION II

308-650A COMBINATORIAL ALGORITHMS I

308-651B COMBINATORIAL ALGORITHMS II

308-660A COMPUTER METHODS IN OPTIMIZATION I

308-661B COMPUTER METHODS IN OPTIMIZATION II

308-671B COMPUTER SYSTEMS AND ORGANIZATION

308-680A,B,C APPLICATION PROJECT I

308-681A,B,C APPLICATION PROJECT II

308-682A,B,C APPLICATION PROJECT III

308-690A COMPUTER METHODS IN PROBABILITY AND STATISTICS I

308-691B COMPUTER METHODS IN PROBABILITY AND STATISTICS II

308-760A ADVANCED TOPICS: THEORY I

308-761B ADVANCED TOPICS: THEORY II

308-762A ADVANCED TOPICS: PROGRAMMING I

308-763A ADVANCED TOPICS: PROGRAMMING II

308-764A ADVANCED TOPICS: SYSTEMS I

308-765B ADVANCED TOPICS: SYSTEMS II

308-766A ADVANCED TOPICS: APPLICATIONS I

308-767B ADVANCED TOPICS: APPLICATIONS II

5.9 SCHOOL OF URBAN PLANNING

Director
David Farley, B.Arch.(McG.), M.C.P., M.Arch. (Harv.).

Associate Professor
Jeanne M. Wolfe, B.Sc.(Lond.), M.Sc.(W.Ont.), M.A.(McG.).

Assistant Professor
David F. Brown, B.A.(Bishops), M.U.P.(McG.).

Lecturer
Morris Charney, B.Arch.(McG.), M.Arch.(Harv.)

Associate Members
Gordon O. Ewing, M.A.(Glas.), M.A., Ph.D.(McM.).
Jane M. Glenn, B.A., LL.B.(Qu.), D. en Droit (Stras.)

Auxiliary Professors
P. Dansereau, M. Leonard, F. Martin, L. Sankey, H.P.D. Van Ginkel, M. Wexler, L. Zimmering.

Modern urban planning developed into a profession in the early decades of the twentieth century, largely as a response to the appalling sanitary, social and economic conditions of rapidly developing industrial cities. Initially the disciplines of architecture and civil engineering provided the nucleus of concerned professionals. They were joined by public health specialists, economists, sociologists, lawyers and geographers, as the complexities of managing cities came to be more fully understood. Contemporary urban and regional planning techniques for survey, analysis, design and implementation developed from an interdisciplinary synthesis of these fields.

Today, urban planning can be described as a technical and political process concerned with the welfare of people, control of the use of land, design of the urban environment including transportation and communication networks, and protection and enhancement of the natural environment.

McGill was the first university in Canada to offer full time urban planning education. Beginning in 1947, a postgraduate inter-disciplinary program of studies was set up, within which students combined a masters degree in their original discipline with Urban Planning. An autonomous program was established in 1972 which became the School of Urban Planning in 1976.

The objective of the School is to produce qualified professional urban planners for the public and the private sectors. Training is provided at the post-graduate level: the degree offered is the Master of Urban Planning. Students come from a diversity of backgrounds; the physical sciences, the traditional professions and the social sciences. Upon completion of the two and one half year program of studies, graduates are expected to have acquired basic planning skills, a broad view of urban studies and a field of specialization. To achieve these objectives, teaching and research activities are organized within the context of the broader urban studies and research effort at McGill.

The program of studies offered by the School is fully recognized by the Corporation Professionnelle des Urbanistes du Québec (C.P.U.Q.), the Canadian Institute of Planners (C.I.P.) and the American Planning Association (A.P.A.). Graduates of the program can become full members of any or all of these professional organizations following completion of post-graduate internship requirements.

For details of the M.U.P. admission requirements and curriculum consult Section E of the Faculty of Graduate Studies Announcement.

COURSES OFFERED BY THE SCHOOL

409-602D SUPERVISED RESEARCH PROJECT. The Supervised Research Project is intended to crystallize and focus a student's interests on a particular area of enquiry at the end of studies for a Master's Degree in Planning. It should ideally provide the transition into practice or more advanced studies. Joint research projects are allowed.
Staff

409-603D PLANNING PROJECTS I. (Studio). This studio introduces students to practical problems based on real world cases. Material covered includes: problem definition; data sources, collection and analysis; goal setting; the creative process; problem solving; and policy implications. Students work in interdisciplinary groups. Each studio problem is terminated by an oral and graphic presentation of work to which expert critics are invited. Progress is evaluated according to performance in class, in the oral presentation, and on written reports.
Professors Wolfe, Farley and Staff

409-604A PLANNING PROJECTS II. (Studio). The second-year studio is designed to permit the study of planning problems in depth. Problems are chosen depending on the experience and research interests of the participants, or for their topical nature. Prerequisite: Planning Projects I.
Professor Brown and Staff

409-605A GRADUATE SEMINAR. This seminar is directed to the needs of individual students. It focuses on topics of special interest not included in the curriculum. It is given by members of staff as a tutorial.
Staff

409-606B SUPERVISED RESEARCH SEMINAR. The Supervised Research Seminar consists of group conferences between students and staff for the purpose of formulating and developing the students' interests in a particular subject related to their major research undertaking.
Staff

409-607D READING COURSE.
Staff

409-609A PLANNING GRAPHICS. Designed to familiarize the student with graphic techniques used in professional planning work, as well as to heighten environmental perception. The course consists of a weekly lecture which reviews theory and purpose followed by a weekly studio assignment involving the application of practical skills.
Mr. Charney

409-610A/B MAN AND HIS ENVIRONMENT I.

409-611A/B MAN AND HIS ENVIRONMENT II. The purpose of these courses is to expose students to the broad range of principles and practices which are employed by planning professionals in the solution of diverse practical planning problems. The courses consist of a series of six-week intensive modules, each of which emphasizes a specific case study and is taught by a different instructor who has had practical experience in the particular subject area. This format permits in-depth treatment of a wide variety of planning contexts which may be distinguished in terms of their subject matter, location, scale and the role played by the planner. Module topics are systematically varied over a 2-year cycle during which 6 to 8 modules are offered. Students are required to complete four modules.
Staff

409-612B HISTORY AND THEORY OF PLANNING. A review of planning history leads to a consideration of theories of planning. These will be dealt with under three categories: a) explanation of urban phenomena, b) substantive theory, c) theories of process. Students are expected to prepare two term papers; a short one in the area of planning history, and a major one in the area of theory.
Professor Wolfe

409-613B APPLIED QUANTITATIVE TECHNIQUES. Topics include: measurement and multidimensional scaling, statistical distributions and inference, multiple regression and correlation, analysis of variance, automatic interaction detection, plan evaluation techniques, population projections, location-allocation algorithms for locating facilities, spatial interaction models and market area analysis.
Professor Ewing

409-614B URBAN ENVIRONMENTAL PLANNING. Examination and evaluation of methodologies pertaining to the assessment of environmental impact in the urban context and the integration of diverse environmental elements directly within the urban planning process. Consideration is given to both theoretical and practical issues. The quality of recent professional reports is assessed.
Professor Brown

COURSES OFFERED JOINTLY BY THE SCHOOL AND OTHER ACADEMIC UNITS

490-004A LAND USE PLANNING LAW. Comparative study of public control of land use in Ontario and Quebec law, including: constitutional jurisdiction; provincial and regional planning; master plans; zoning by-laws, development control and other innovative methods of land use control; enforcement of by-laws; attacking by-laws; non-conforming uses; subdivision control; agricultural zoning; historic preservation of property.
Professor J.M. Glenn

301-435B URBAN PLANNING I. Theory and practice. An examination of different basic approaches to urban planning with examples.
Professor J. Wolfe

301-436A URBAN PLANNING II. Land Use Regulation and Project Development. Theory and practice. Detailed analysis of selected examples of the development process and of current techniques in land use and design control. Each student will be expected to prepare case studies.
Professor D. Farley

6 CHOICE OF ELECTIVES AND MINOR PROGRAMS

Students of the Faculty have a considerable choice of electives divided into the categories of general and technical. The choice while wide is limited by timetable considerations and by departmental regulations although the Faculty tries to arrange its timetable to provide maximum choice. The general elective credits are intended to relate to courses in the areas of Social Sciences, Humanities, and Administrative Studies. The intent of these electives is to make students aware of the role of the professional engineer in society and the contributions engineering work makes to the economic, social and cultural aspirations of society. The departments publish, in this *Announcement* and in separate documents, information regarding the choice of courses. Students should also consult their course advisers. Some general information applicable to all students of the Faculty is given below. This mainly covers the areas of management and computer science, topics of considerable importance to engineers, but also gives information on environmentally oriented courses, computer science, and materials science.

6.1 COURSES IN MANAGEMENT FOR ENGINEERING STUDENTS

Many engineers begin to assume management functions within a few years of graduation. They can at this stage take up the study of economics, behavioural science and other management subjects. For students wishing to include studies in their undergraduate program, the University provides through our own Faculty and the Faculty of Management, a variety of suitable courses.

Two courses are available: Engineering Economy 306-310, which introduces the concept of costs into evaluations of engineering projects and architectural proposals; and Economics for Engineers 154-202 which provides a course in general economics.

Seven courses are available, subject to timetable requirements, from the core program of the Faculty of Management. They are:

280-211A,B	Accounting I
280-222B	Intro. to Organization Behaviour
280-323A,B	Organization Theory
280-341A,B	Finance I
280-352A,B	Marketing Management
280-373A,B	Operations Research
280-393A,B	Managerial Economics

Other courses from the core have considerable overlap with our own courses and thus are not available to our students. **Note:** Course 280-211 Accounting I and a course in statistics are prerequisite for 280-341 Finance I.

MINOR IN MANAGEMENT

Engineering students may obtain a Minor in Management by completing five of the above list of Faculty of Management courses (one of which must be 280-211A,B) with a grade of C or better. Successful completion of this minor is noted on a student's transcript.

An Engineering course deemed equivalent by the Faculty of Management may be substituted for course 280-373 Operations Research.

The content of the Minor, 15 credits, exceeds the general elective allowance in Engineering, currently between 3 and 9 credits depending on the department. A department may be willing to accept one or more courses as technical electives but a student embarking on the Minor must be prepared to take credits additional to the normal engineering program. Students considering this Minor should consult their adviser.

Prerequisite to entry to this minor is a grade C or better in Economic Analysis 154-200 or Economics for Engineers 154-202 or Engineering Economy 300-310.

Students who complete this minor may be given credit for up to five half courses in the MBA I program at McGill. In order to obtain such credit the students:

a) must have graduated with a C.G.P.A. of 3.4 or better in their B. Eng. degree
b) will be expected to complete the remaining MBA I courses on a part-time evening basis while working during the day in a job related to the program
c) will be required to write a research paper during MBA II in addition to carrying a full load of courses.

6.2 COMPUTER SCIENCE

The School offers an extensive range of courses for Engineering students interested in computers. The basic courses, given by the School of Computer Science, are:

308-208A,B	Computers in Engineering
308-210A,B	Computer Structure and Assembly Language Programming
308-230A,B	Computers in Data Processing
308-315A	Information Structures
308-350A,B	Numerical Analysis

For other courses available see Section 5.8 of the Announcement.

MINOR IN COMPUTER SCIENCE

Engineering students may obtain a Minor in Computer Science as part of their B.Eng. degree by satisfying the 24 credit requirement described below. In general, electives and technical electives within Engineering Departmental programs may be used to satisfy some of these requirements, but usually the Minor in Computer Science will require extra credits of study beyond those needed for the

B.Eng. degree. The number of extra credits depends on Departmental requirements, but is typically about nine. Students should consult their Departments about the use of electives and about the extra credits required.

Requirements

A. The program must consist of 24 credits as follows:
   1. Three credits, chosen from:
      308-210 Computer Structure and Assembly Language Programming
      308-273 Introduction to Small Computers
      304-221 Introduction to Computers
   2. Three credits:
      308-350 Numerical Analysis
   3. Twelve credits, chosen from:
      (a) any Computer Science course numbered 230 or higher.
      (b) any approved course in another department that has a significant Computer Science content.
   4. Six credits, chosen from:
      (a) any Computer Science course numbered 230 or higher.
      (b) any approved Departmental elective course which makes considerable use of computing.

B. Course 308-208 Computers in Engineering (compulsory for some Engineering students) does not form part of the Minor.

C. The student must come to the School of Computer Science, at registration time in his U3 year, to fill out a Minor program form and to receive approval for his particular selection of courses.

D. All courses in the Minor program must be passed with a grade of C or better.

E. In the specific case of Electrical Engineering, requirement A.3, above, must include at least six credits from category (a) or six credits of elective hardware design courses.

Courses in Other Departments

The following is a list of courses, offered by other departments, that will normally be approved for inclusion in the Minor program under both categories 3(b) and 4(b) specified in requirement A. This list is not necessarily complete.

302-356A	Computer Methods in Chemical Engineering
302-370B	Models of Socio-Technical Systems
302-455B	Process Control
303-445A	Construction Project Management
303-460A	Structural Analysis II
304-322A,B	Digital Systems Design
304-424A	Small Computer Systems
304-425B	Computer Organization and Architecture
304-426A,B	Microprocessor Systems
304-492A,B	Digital Systems Laboratory
304-512B	Digital Signal Processing
304-521B	Digital Communications
304-529A	Image Processing and Communications
304-531B	Real-Time Systems
304-532A	Computer Graphics
304-533B	Text Processing
304-543B	Numerical Methods in Electromagnetics
305-474B	Selected Topics in Operations Research
305-475B	Numerical Control of Machine Tools

In addition, there are many other courses that may be approved for inclusion under category 4(b). Students may consult with the School of Computer Science about the acceptability of particular courses.

The courses in other departments are at a variety of levels. Some are required courses in the student's ordinary program; some are courses that may be taken as technical electives. Students should consult with their advisers about the possibility of taking specific courses.

The following categories are a guideline to the content of the available courses:

Programming and Programming Languages
304-221, 304-424, 305-291, 308-107, 308-208, 308-210, 308-273, 308-300, 308-302.

Software Design
304-221, 304-424, 304-425, 304-512, 304-521, 304-529, 304-532, 304-533, 308-305, 308-310, 308-315, 308-320, 308-405, 308-415, 308-424, 308-425, 308-530.

Hardware Design
304-221, 304-322, 304-425, 304-426, 304-492, 304-512, 304-521, 304-532.

Real-Time Processes
302-455, 304-531, 305-475.

Operations Research
302-356, 303-208, 303-445, 305-474, 308-566, 308-567.

Numerical Analysis
302-356, 304-543, 308-350.

6.3 ENVIRONMENTAL STUDIES AND POLLUTION CONTROL

The Faculty of Engineering offers an "area of concentration" in Pollution Control, which consists of about 15 engineering and non-engineering courses devoted to the technology of pollution control and broader topics related to pollution control. This "area of concentration" may be developed into a

pollution-control "Minor" once sufficient courses specifically devoted to this subject are available.

While a basic engineering education is essential to professional work of this kind, students who are interested in orienting their program towards pollution control should note the following courses which are of direct relevance. These courses are divided into three groups; introductory, intermediate and advanced, which are respectively, in general, suitable for students in their first, second and third years. Since the pollution control courses are regular engineering departmental offerings, students interested in them may not have the stated prerequisite. In this case they should consult the professor in charge of the course regarding their eligibility.

Introductory

302-230	Environmental Aspects of Technology
302-370	Models of Socio-Technical Systems
302-374	Air Quality Control Systems
303-310	Sanitary Engineering

Intermediate

302-471	Industrial Water Pollution Control
302-472	Industrial Air Pollution Control
303-430	Municipal Systems
303-431	Stream Pollution and Control

Advanced

305-447	Combustion
306-328	Mine Environments

Non-engineering courses

154-425	Economics of Ecology
177-305	Environmental Biology
177-432	Limnology
180-307	Analytical Chemistry of Pollutants
495-471	Environment and the Law

Course 302-370 explores techniques for global modelling of the interactions between pollution, health, resource depletion, agricultural technology and other factors. Course 302-371 looks at air pollution from a social and legal point of view to expose the problems involved in formulating community pollution control programs.

Those wishing to develop professional competence can choose either the 302-471, 472 sequence in Chemical Engineering or the 303-430, 431 sequence in Civil Engineering. The former emphasizes control of factory effluents while the latter emphasizes water sewage treatment and stream pollution.

The other courses listed involve various specific aspects of pollution sources, detection and control.

ENVIRONMENTAL STUDIES MINOR

Environmental studies involve the interactions between man and his natural or man-made environment. Environmental problems are frequently comprehensive and complex, and their satisfactory solution requires the synthesis of humanistic, scientific, and institutional knowledge. The Environmental Studies Minor offered by the Faculty of Science is open to students in Engineering. The program is administered by the Department of Geography, and the supervisor is Professor T.C. Meredith, from whom further information can be obtained (Burnside Hall, Room 414, telephone 392-4718).

Detailed regulations for the program are presented in the *Faculty of Science Announcement*. Since the program requires a total of 24 credits for the minor, additional credits beyond those needed for the B.Eng. degree are required. However, since the approved list of optional courses contains a number of courses offered by the Faculty of Engineering, a judicious choice of courses should make it possible for the B.Eng. student to obtain the minor for a total of about 110 credits. Students wishing to receive the minor should prepare a program, have it approved by their regular Engineering Faculty Adviser, and submit it to the Supervisor of the Environmental Studies Program in the Department of Geography for certification. Students interested in the environmental area, but not intending to complete the minor, are well advised to consult the list of approved courses, as this constitutes the most comprehensive assessment of offerings in this area at McGill.

6.4 MATERIALS SCIENCE

Materials such as structural steel and reinforced concrete, high-alloy heat-resistant steels, composites such as fibreglass, polymers such as polyethylene and highly refined exotic materials such as germanium and silicon are of vital importance to engineers. A survey of the properties and characteristics of a wide range of such materials is provided by the elective, Materials Science 306-215A,B, offered by the Department of Mining and Metallurgical Engineering. The course 303-201A, Structural Materials, offered by the Department of Civil Engineering, treats similar material from a somewhat different viewpoint. Both courses are especially suitable for students in their first year. Course 306-367B, Metallurgy of Engineering Materials, deals with the metallurgical aspects of design and materials selection, and will be of interest particularly to students of Mechanical and Civil Engineering. Polymer Technology 302-381B offered by the Department of Chemical Engineering, without prerequisite, to students from other engineering departments, deals exclusively with the physical properties and processing of fast-growing polymeric materials such as plastics, rubbers and composites. More advanced and specialized courses are provided by the departments and students should consult their departmental advisers regarding their choice.

6.5 OUTSIDE DEPARTMENTS OFFERING COURSES FOR THE ENGINEERING CURRICULA

DEPARTMENT OF CHEMISTRY

Chairman
M. Onyszchuk

COURSES OFFERED BY THE DEPARTMENT

180-212A,B INTRODUCTORY ORGANIC CHEMISTRY I 4(3-3-6). (Prerequisites: 180-110B and 180-120A, or equivalent courses). A survey of reactions of aliphatic and aromatic compounds including modern concepts of bonding, mechanisms, conformational analysis stereochemistry and spectra.
Professor Farrell or Harpp and Mrs. Heyge

180-213A,B INTRODUCTORY PHYSICAL CHEMISTRY I 3(3-0-6). (Prerequisites: 180-120A or equivalent; 189-120A,B and 189-121A,B or equivalent). Gas laws, kinetic theory. First law of thermodynamics, enthalpy, thermochemistry, bond energies. Second law of thermodynamics: the entropy and free energy functions. Chemical and thermodynamic equilibrium states. Phase rule. Colligative properties of ideal solutions. Selected special topics which may include chemical kinetics, electrochemistry and others. (Not open to students who have taken or are taking 180-204A).

180-233B SELECTED TOPICS IN PHYSICAL CHEMISTRY 3(3-0-6). For Chemical Engineers only. Introduction to chemical kinetics, surface and colloid chemistry and electrochemistry. The topics to be discussed will be of particular interest to students in chemical engineering.

180-234A,B SELECTED TOPICS IN ORGANIC CHEMISTRY 3(3-0-6). (Prerequisite: 180-212A,B or equivalent). For Chemical Engineers only. Modern spectroscopic techniques for structure determination. The chemistry of alkyl halides, alcohols, ethers, carbonyl compounds and amines with special attention to mechanistic aspects. Special topics.
Professor Chan or Perlin

180-331A INORGANIC CHEMISTRY OF THE SOLID STATE 3(3-0-6). (Prerequisites: 180-110B and 180-120A or equivalent). Primarily, but not exclusively, for engineers. Electronic structure and properties of elements in relation to the Periodic Table. The solid state: structure, bonding, magnetic properties of metals and alloys. Descriptive chemistry of the metals.
Professor Harrod

DEPARTMENT OF ECONOMICS

Chairman
I. Brecher

COURSES OFFERED BY THE DEPARTMENT

154-200D ECONOMIC ANALYSIS AND APPLICATIONS. (6 credits). A University level introduction to price theory, national income determination, money and banking, international trade theory and economic policy. The course will be given in several sections. Sections will be designed to accommodate students with varying backgrounds in economics. (Not open to students who have taken or are taking 154-202B, 154-203A or 154-204B).
Professors Brewer, Deutsch, Fenichel, Naylor, Watson and Weldon

154-202B ECONOMICS FOR ENGINEERS 3 credits. (Prerequisite: 189-263A or equivalent). An introduction to microeconomics designed for Engineering Students. Economic theory will be developed using mathematical techniques where appropriate. Applications of economic theory to the analysis of economic problems, with particular reference to Canada, will be considered. (Students who desire a further course in economic theory after 154-202B should take 154-203A.)
Professor Vicas

154-203A MACROECONOMIC ANAYSIS AND APPLICATIONS. (3 credits). This course covers the macroeconomic material contained in 154-200D. (Not open to students who have taken or are taking 154-200D)
Professor Kurien

DEPARTMENT OF GEOLOGICAL SCIENCES

Chairman
C.W. Stearn

COURSES OFFERED BY THE DEPARTMENT

186-210A INTRODUCTORY MINERALOGY 3(2-3-4). Mineralogy of the major rock-forming and ore minerals.
Professor Francis

186-221A GENERAL GEOLOGY 3(2-3-4). A survey course in physical geology with emphasis on engineering and economic aspects.
Professor Grice

186-232B STRUCTURAL GEOLOGY 3(2-3-4). (Prerequisite: 186-221A or equivalent). Nature, origin, and practical significance of rock structures (faults, joints, folds, etc.) are presented in a mining engineering perspective.
Professor Eakins

186-440B MINERAL DEPOSITS 3(2-3-4). (Prerequisites: 186-210A, 186-232B). Nature, origin, mode of occurence and classification of ore

deposits of metallic and non-metallic minerals; typical occurences; geographical distribution.
Professor Williams-Jones

DEPARTMENT OF MATHEMATICS

Chairman
J.R. Choksi

COURSES OFFERED BY THE DEPARTMENT

189-261A,B DIFFERENTIAL EQUATIONS I 3(3-1-5). (Prerequisite: a basic course in vectors, matrices and analytic geometry). Introduction to ordinary differential equations, first order differential equations, introduction to complex valued functions, second and higher order homogeneous and non-homogeneous equations, series solutions including Bessell and Legendre functions, Laplace transform techniques, some applications.

189-262A,B DIFFERENTIAL EQUATIONS II AND LINEAR ALGEBRA 3(3-1-5). (Prerequisite: 189-261). Similarity transformations, matrix diagonalization, solution techniques for systems of linear constant coefficient differential equations; nonlinear differential equations and stability; linear difference equations; numerical methods for solving ordinary differential equations.

189-263A,B ADVANCED CALCULUS 3(3-1-5). (Prerequisite: a basic course in vectors, matrices and analytic geometry). Infinite series, power series, perturbation and asymptotic expansions; vectors, lines and planes, curves and curvature arc lengths, stability of orbits; partial derivatives, implicit functions, Jacobians; Taylor's theorem for one and several variables, approximations; minima and maxima of functions of several variables, constrained extrema; multiple integrals.

189-264A,B INTRODUCTION TO BOUNDARY VALUE PROBLEMS 3(3-1-5). (Prerequisites: 189-261 and 189-263). Scalar and vector fields, vector differential operators, line integrals; divergence theorem, Stokes' theorem, Green's theorem; partial differential equations of mathematical physics; eigenvalue problems, Sturm-Liouville theory, Fourier expansions; solution of Laplace, diffusion and wave equations by separation of variables.

189-267B DIFFERENTIAL EQUATIONS II AND LINEAR ALGEBRA 3(3-1-5). (Prerequisite: 189-261. Co-requisite: 189-263). Honours section of 189-262; similar in content, but taught in greater depth and with more challenging assignments.

189-269B INTRODUCTION TO BOUNDARY VALUE PROBLEMS 3(3-1-5). (Prerequisites: 189-261 and 189-263). Honours section of 189-264; similar in content but taught in greater depth and with more challenging assignments.

189-343A DISCRETE MATHEMATICS AND APPLIED ALGEBRA (3 credits; prerequisites: any half course in linear algebra and some familiarity with infinite series). An introductory course in "Discrete Mathematics", including topics from some of the following areas: Combinatorial Analysis; Graphs and Networks, Flows; Finite State Machines; Propositional Calculus, Boolean Algebras, Switching Circuits; Groups, Finite Fields, Polynomials; Algebraic Coding Theory.
Professor Brown

189-381A FUNCTIONS OF A COMPLEX VARIABLE 3(3-0-6). (Prerequisite: 189-263). Analytic functions, elementary functions, Cauchy-Goursat theorem and its consequences, power series, poles and residues. The Fourier integral, Fourier transforms, Laplace transforms, applications, complex inversion theorem.

189-384B PROBABILITY 3(3-0-6). (Co-requisites 189-269). Discrete and continuous probability distributions and random variables. The binomial, Poisson, and normal distributions. Characteristic functions and the central limit theorem. Stationary stochastic processes: autocorrelation and spectral density functions, white noise, stationary processes as inputs to linear systems.

189-385A COMPLEX VARIABLES 3(3-0-6). (Prerequisite: 189-269). Analytic functions, Cauchy-Riemann equations, Cauchy's theorem and consequences, Taylor and Laurent expansions, residue calculus, Fourier transforms, inversion integral for Laplace transforms, the argument and Rouchē's theorems, Poisson's integral formulas, conformal mapping, Schwarz-Christoffel transformation, Green's functions, complex variables and integral transform methods of solution to boundary value problems.

DEPARTMENT OF PHYSICS

Chairman
N. de Takacsy

COURSES OFFERED BY THE DEPARTMENT

198-244B WAVES 3(3-0-6). (Prerequisite: 304-201, Co-requisite: 189-264). Transverse waves on a string, on a membrane. Acoustic Waves in fluids. Voltage and current waves in electric transmission lines, Wave equations. Transient travelling wave steady-state a.c. case. Geometrical optics, lens and mirrors. Introduction to polarization, interference and diffraction.

198-271B QUANTUM PHYSICS 3(3-0-6). Special Relativity. The observed properties of atoms and radiation from atoms. Electron waves. The Schroedinger Equation in one dimension. Quantum mechanics of the hydrogen atom. Angular momentum and spin. Quantum mechanics of many electron systems. The diatomic molecule. Basic ideas in nuclear and particle physics.

198-274B WAVES 3(3-0-6). (Prerequisite: 304-201, Co-requisite: 189-269). Honours version

of 198-244. Similar in content to 198-244 but taught in greater depth.

198-321A MODERN PHYSICS 3(3-0-6). (Prerequisite: 303-282 or 303-287). The background to Modern Physics: Relativity, the energy-momentum invariant; black-body radiation; Compton effect; Rutherford-Bohr-Sommerfeld Atom. Concepts of Quantum Mechanics: Schroedinger equation, one dimensional problems; the hydrogen atom. Pauli Principle. Zeeman effect. Recent developments.

198-323B ELECTRICAL ENGINEERING THERMODYNAMICS 3(3-0-6). (Prerequisite: 198-321). Definition of Thermodynamics. Postulates. Thermodynamic variables, potentials leading to the characterization of equilibrium electro-mechanical properties of materials. Non-equilibrium properties, thermoelectric effect, heat and electric conduction. Statistical mechanical foundations of thermodynamics applied to electrons in a solid, distribution function, Fermi energy, Planck's law of radiation, concept of thermal velocity.

MINOR IN PHYSICS

Students in Honours Electrical Engineering may obtain a Minor in Physics as part of their B. Eng. degree by satisfying the 18 credit requirement listed below:

198-357D	Quantum Mechanics
198-337B	Nuclear Energy
198-362B	Statistical Mechanics

and at least 6 credits chosen from the following:

198-434B	Modern Optics
198-514B	General Relativity
198-551A	Quantum Theory
198-557A	Nuclear Physics
198-558A	Solid State Physics
198-559B	Advanced Statistical Mechanics
198-562A	Electromagnetic Theory
198-567B	Particle Physics
198-572B	Applications of Electromagnetic Theory

Students who take 198-357D can omit 198-271B from their normal electrical engineering program. Up to six credits may be selected as technical electives the other courses are additional to the normal degree requirements in electrical engineering. Candidates must come to the Department of Physics at registration time in their U3 year to fill out a minor program form.

FACULTY OF EDUCATION

Dean
George E. Flower

COURSES OFFERED BY THE FACULTY

430-201 EFFECTIVE WRITTEN COMMUNICATION. (3 credits). A course designed to help students develop the quality and effectiveness of writing in various academic and professional situations. Emphasis is on the writing process itself: appropriate problem solving strategies; ways of generating, developing and organizing ideas; designing communication for different audiences and purposes; revising and editing texts; and analyzing writing problems.

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1982
ÉCOLE FRANÇAISE D'ÉTÉ
66e SESSION
26 JUIN–7 AOÛT 1982

McGill University
Montreal

Directeur: Georges-Paul Collet

Secrétaire administrative: Jocelyne Garant

Adresse pendant l'année

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Tél.: (514) 392-4678, 4679

Pendant la session d'été

Douglas Hall
3851, rue Université
Montréal, Québec
Canada H3A 2B4
Tél.: (514) 392-4678, 4679

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McGILL UNIVERSITY

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GENERAL INFORMATION

McGILL UNIVERSITY

McGill University was founded under a bequest of the Honourable James McGill, a wealthy Montreal merchant of Scottish descent.

The University was granted a Royal Charter in 1821. It is internationally known for its high academic standards.

THE FRENCH SUMMER SCHOOL

The French Summer School is a coeducational school established in 1904.

It is an integral part of the Faculty of Arts, working in close cooperation with the Department of French Language and Literature. The M.A. studies are under the responsibility of the Faculty of Graduate Studies and Research. The *courses carry credits* toward McGill undergraduate and graduate degrees; such credits are also *transferable* to North American institutions of higher education.

THE DIVISION SYSTEM

French Summer School students are grouped into three Divisions: B (undergraduate level), C (graduate level), D (Master of Arts).

AIMS OF THE SCHOOL

English-speaking students and teachers who wish to attain real fluency in French and, at the same time, get acquainted with the literature, fine arts and civilization of French-speaking countries, will find appropriate courses at both undergraduate and graduate levels.

Undergraduates who have taken 4 semesters of French and who wish to improve their speaking and writing skills *(Division B)*

Those having obtained a B.A. degree or its equivalent with sufficient background in the French language, and who wish to take courses at the graduate level in Language, Literature and Civilization *(Division C)*

Graduates who are presently working towards an M.A. or a Ph.D. at universities other than McGill, and who wish to transfer the credits earned at the French Summer School *(Division C).*

Teachers of French, at the Elementary or Secondary School, College or University level, who require a refresher course *(Division B or C)*

Graduates who wish to work towards an M.A. at McGill University by attending sessions at the French Summer School (M.A. with or without thesis) *(Division D)*

IMMERSION IN FRENCH

Linguistic fluency is greatly helped by the *exclusive use of French* at all times during the session. **All courses are taught in French,** by experienced instructors belonging to university departments of French. The average student-instructor ratio varies between 12 and 15 to one; some members of the teaching staff are accommodated in the same residence as the students and associate freely with them at meals, in discussion groups, and in numerous cultural and social activities.

CULTURAL AND SOCIAL ACTIVITIES

These activities take place in the afternoon or evening. Their diversity allows for free choice according to availability of time, and personal tastes. These activities complement the academic courses and allow students to experience thorough immersion in French during their stay at the School. Certain activities will require a contribution from the students. Over the years the following activities have proved especially popular:

1. French folk-songs;
2. Evening musical concerts;
3. Talent shows;
4. Films (short, educational and full-length features);
5. Selected T.V. programs;
6. Lectures, conferences, debates, discussion groups;
7. Sports: tennis, swimming, ping-pong, etc.;
8. French "Guinguette";
9. Dances;
10. Excursions;
11. Theatre, etc.

Note: Students may bring their musical instruments

THE GET-ACQUAINTED-WITH-QUÉBEC-PROGRAM

The fact that it is held in Montréal explains in part the continued popularity of the McGill French Summer School. Montréal, the bilingual metropolis of Canada and also the 2nd largest French-speaking city in the world.

This program has been organized in order to introduce students to the realities of present-day Québec.

The program includes:

(a) courses on different aspects of Québec civilization and culture;
(b) cinema, folklore, songs;
(c) informal outings to sites of historical, social and cultural interest in and around Montréal.
   - visits in Old Montréal;
   - meetings with representatives of different social and professional groups;
   - visits to Museums and Art Galleries;
(d) excursions to places of interest such as Québec City and the Eastern Townships.

In addition, students will find in Montréal the ideal environment in which to practise the French language. The French Summer School is located in the heart of the city whose various resources include French radio, T.V. and cinema, French-speaking churches, boutiques, book-shops, theatres and restaurants. At the beginning of the session, tourist information (maps, booklets, etc.) will be given to students. An information bulletin, "l'Été Libre", printed by the French Summer School and written by students, is distributed twice a week, and contains suggestions on particularly interesting events taking place in the Montréal area.

LANGUAGE LABORATORY

One of the most effective teaching aids used at the French Summer School is the McGill University Language Laboratory. The excellence of its equipment makes it one of the best tools available for programmed and individual practice. The Tape Library places a considerable variety of materials (readings in prose and verse by elocutionists and contemporary writers; plays, acted by the best French companies) at the disposal of French Summer School students.

Peterson Hall 3460 McTavish

THE ASSOCIATION OF THE FRENCH SUMMER SCHOOL STUDENTS

All the students of the School are members of the Association. Every summer, the M.A. students elect delegates who carry out their duties throughout the year.

INFORMATION FOR PROSPECTIVE STUDENTS

STATUS OF STUDENTS IN THE SCHOOL

The School is a residential School which accepts *full-time resident students.* Students may be admitted as *non-residents,* but they are strongly advised to reside at the school, as residence is far more beneficial to them.

APPLICATIONS FOR ADMISSION

DIVISIONS B AND C

Application to the School must be made on an application from *(Formule d'admission)* available from the School Secretary.

The completed application form, accompanied by a **Letter of Recommendation,** a **Transcript of academic records** and an application fee of $15. in **Canadian currency** must reach, before June 15th, the French Summer School Secretary's Office (Pavillon Peterson, 3460 rue McTavish, Montréal, Québec, Canada, H3A 1X9). **Since the number of students admitted to the School is limited,** students are strongly advised to apply as soon as possible. Accepted applicants will receive a **Lettre d'admission** from the French Summer School. In case the student is unable to attend, he should notify the Secretary as soon as possible.

DIVISION D

Application to the School must be made on an **Application for Admission to the Faculty of Graduate Studies and Research** form available from the School Secretary.

The completed application form together with the required documents and an application fee of $15. in Canadian currency, must reach, before June 15th, the French Summer School Secretary's Office (Pavillon Peterson, 3460 rue McTavish, Montréal, Québec, Canada, H3A 1X9). Students from the United States must **also** submit Graduate Record Examination Scores.

The Faculty of Graduate Students and Research will notify the applicant by mail as to its decision on the application.

Students who have not sent in by Registration Day an *official final transcript of their degree* because they have just completed their senior year in June immediately preceding the Summer School session, must send this document as soon as possible, and *no later than August 1st.*

N.B. Division D students having attended a previous session of the French Summer School must inform the School of their intention to register each subsequent year *before June 15th.*

NON-CANADIAN SESSION STUDENTS

Non-Canadian students applying to French Summer School should do so as soon as possible in order to allow enough time to comply with the procedures necessary to obtain a student visa.

All foreign students accepted to the French Summer School must obtain a Canadian Student Visa. The application material contains an Application for a Certificate of Acceptance from the Québec government. You must complete and return this to the Québec Ministry of Immigration along with proof of sufficient funds for your stay, at the same time as you send your application to the University. You do not need to send Québec proof of admission since we will send you a letter of admission, specifying dates, fees, etc., a copy of which will go to the Ministry automatically.

You will then receive a Certificate of Acceptance from Québec which can be presented, with your letter of admission from the French Summer School, to a Canadian Consulate or Embassy to obtain a student visa. American students may also obtain their visa at a port of entry upon presentation of the same documents.

Please read carefully all the instructions and information included in your package.

Medical Insurance

Non-Canadian students should ensure that they have adequate hospitalization and medicare coverage before they come to McGill University since they will not be eligible for Québec Medicare.

McGill University can provide medical insurance for a nominal premium to those Summer Session students who may require coverage. Information on the McGill Foreign Student Insurance Plan is available from the Dean of Students Office, 3637 rue Peel, (514) 392-5364.

ADMISSION REQUIREMENTS

Applicants for admission must meet specific requirements with respect to age, general education and proficiency in French Admission is selective.

AGE

minimum: 18, before June 1st, 1982

GENERAL EDUCATION AND PROFICIENCY IN FRENCH

Division B: 2 years of French at a CEGEP, College or University or equivalent.

Division C: Students should hold a Bachelor's degree and should speak French with reasonable fluency, write correct French and experience no difficulty in reading the Language.

Division D: See "Réglementation de la Maîtrise", p. 18.

DATES AND REGISTRATION

The French Summer School will begin on **Saturday, June 26th** and end on **Saturday, August 7th.**

Students in residence must arrive at the School before midnight on **Saturday, June 26th.**

REGISTRATION 5will take place at **Douglas Hall** (3851 rue University) on **Saturday, June 26th.**

All students non-resident must present themselves on **Saturday afternoon June 26th** in the following order: last names beginning with the letters:

ABC	at 14h.	MNOP	at 15h.30
DEFG	at 14h.30	QRS	at 16h.
HIJKL	at 15h.	T to Z	at 16h.30

All resident students must present themselves on **Sunday afternoon June 27th** in the following order: last names beginning with the letters.

ABC	at 14h.	MNOP	at 15h.30
DEFG	at 14h.30	QRS	at 16h.
HIJKL	at 15h.	T to Z	at 16h.30

Students will be given instructions concerning their registration. The instructors will be at the students' disposal during Registration to provide them with additional information on the content of courses, on the oral and written work requested in these courses, etc.

No resident student will be admitted to the School if he arrives later than **Sunday, June 27th.**

Classes will begin on Monday morning, June 28th.

Course changes must be made **Friday, July 2nd** (at Secretarial office) with the **formule de changement de cours** duly filled. The approval of the instructor of the newly chosen course is mandatory. No change can be made after this date.

Classes will end on Friday, August 6.

Students must have left the Residence by 4:00 p.m. Saturday, August 7th.

GRADING AND CREDIT SYSTEM

Courses are graded in percent with the following letter equivalences:

Letter Grades	Grade Points	Percentages
A	4.0	85-100
A–	3.7	80-84
B+	3.3	75-79
B	3.0	70-74
B–	2.7	65-69
C+	2.3	60-64
C	2.0	55-59
D	1.0	50-54
F(Fail)	0	0-49

All reports of standing, transcripts and other documents will show both letter grades and reported percentage grades.

Grades A through C are termed satisfactory passes, D a conditional pass and F a failure.

In Divisions C and D a mark under 65% is considered a failure.

Each course carries 2 credits, when not otherwise mentioned.

REPORTS OF STANDING AND TRANSCRIPTS

The Reports of Standing are issued and mailed to the students by the Registrar's Office within four weeks following the end of the session.

Requests for transcripts should be addressed to the Registrar of the University (Registrar's Office, Transcripts Department, McGill University, F. Cyril James Building, 845 Sherbrooke St. West, Montréal, Québec, Canada, H3A 2T5), who will forward them on payment of a fee of $2.25 for the first copy and $0.75 for each additional copy made at the same time. **Students who intend to apply such credits forwards a degree are advised to obtain the consent of their own Institution or Department to the transfer of French Summer School credits before attending the School.**

TUITION FEES AND RESIDENCE CHARGES

Tuition Fee
- Special division (396-200L.) ..... $495.
- Division B ..... $425.
- Division C, D ..... $525.

Residence (Room and Board) ..... $792.

Division D students: those attending their D5 or D6 session for the **M.A. without thesis** pay a tuition fee of $300.

This reduced fee is applicable only to those students having pursued their studies at the French Summer School from the beginning (Da or D1).

N.B.: In order to facilitate the Registration procedure, **students are strongly advised to mail the fees for tuition and residence in advance.** Cheques or money orders should be made payable to "McGill University" and sent to the Secretary of

the French Summer School, McGill University, 3460, rue McTavish, Pavillon Peterson 242, Montréal, Québec, H3A 1X9.

Fees should be mailed **BEFORE** June 15th. After this date, students should not send their fees, but pay them at the time of Registration.

REFUNDS:

1. The application fee of $15. is not refundable. Tuition fees and residence charges are refundable any time **before** Registration Day.
2. After Registration Day, refund of tuition fees is only possible for students withdrawing from the School and must **notify** the office **in writing** before 5 p.m. Friday, July 2nd. From them on, ***no*** refund will be made.
3. Students leaving before the end of the School will pay the residence on a pro rata basis.
4. The deposit paid to the residence is not refundable.

RESIDENCES

The Residence is Douglas Hall, **3851 University Street.** (Please see "Plan de l'Université McGill", Centerfold).

Each student has a single study room and there are spacious common rooms.

All rooms are furnished. Linen and blankets are provided (to be cleaned by students).

The Residence is equipped with complete laundry facilities.

There is a 24 hour a day security guard at the Residence. Security phone 392-4388, in case of emergency only.

The University tennis courts and swimming pool are open to French Summer School students, upon payment of a season's fee.

Students in residence are entitled to use the University Health Service, 3637 Pell St., (tel.: 392-5446). In case of emergency, students can go to the Royal Victoria Hospital Clinic on University Street, close to the Residence (tel.: 842-1231, local 1885). Referral to a private physician for other treatment will be arranged but the School cannot assume any responsibility for medical treatment.

SCHOOL DISCIPLINE

On Registration Day, students will be given all necessary information concerning residence and study. Only the few rules necessary for the administration of the School and for the protection of community life have been kept.

At the French Summer School, each student must consider himself personally responsible for the smooth running of the School in general and for the respect of discipline by all.

a) *Telephones:* Telephone calls necessitating the use of English must be made outside the residence. Students would be well advised to request their parents not to call them at their residence except in case of an emergency.
b) *Visitors* cannot be entertained in the residence unless they speak French.

Moreover, every student admitted to the French Summer School undertakes to follow these rules:

FRENCH IS TO BE USED EXCLUSIVELY AT ALL TIMES, IN AND OUT OF CLASS, AND ESPECIALLY IN THE RESIDENCE. EVERY APPLICANT PLEDGES HIMSELF TO USE ONLY FRENCH DURING THE SESSION IN ALL CIRCUMSTANCES. THE SCHOOL EXPECTS EVERY STUDENT TO OBSERVE THIS RULE FAITHFULLY, AS IT WAS INSTITUTED AT THE REQUEST OF THE STUDENTS AND IN THE INTEREST OF ALL.

EVERYONE'S FREEDOM IS LIMITED BY THAT OF THE OTHERS. ANY NOISE THAT MIGHT DISTURB THOSE WORKING OR RESTING, MUST BE AVOIDED, ESPECIALLY AT NIGHT.

Students who do not follow these rules put themselves in the position of being expelled immediately from the School. A Student expelled from the School for disciplinary reasons cannot claim any reimbursement of fees.

TEXTBOOKS AND LIBRARY FACILITIES

Students are expected to have a copy of all the "Manuels" and "Textes" listed for the courses they take.

They should bring with them the dictionaries and grammars which they use at home or at school.

The resources of the McLennan and Redpath Libraries are available to them. Most of the material listed as "Lectures obligatoires" and "Lectures conseillées" are found in the Reserve section for the benefit of the French Summer School students.

Guided visits (in French) and information on the cataloguing system of the Libraries will be arranged.

STUDENT AID & FOREIGN STUDENT ADVISER OFFICE

The Student Aid section of this office handles all matters relating to financial assistance, whether University, Provincial or Federal. Non-Canadian students requiring certification of registration and/or letters of advice to Foreign Exchange Control Boards may obtain them from this office.

The Foreign Student Adviser section deals with all matters which may affect non-Canadian students such as problems with the Canadian Department of Manpower and Immigration and information concerning the necessity of compulsory health insurance.

Location: 3637, Peel Street
General Information: 392-5256

BANKING ARRANGEMENTS

It is recommended to out-of-town students that they bring letters of credit or use traveller's cheques, rather than draw ordinary cheques on their home banks. The School has no facilities for cashing cheques.

PROGRAMME DES COURS DE 1982

Programme Spécial

396-200L. Cours accéléré de français parlé. (Accelerated learning of spoken French). This course, intended for beginning students having no previous knowledge of French, is based on the work of Dr. G. Lozanov, Director of the Research Institute of Suggestology in Sofia, Bulgaria, and on our experience. The texts follow closely the principles of suggestopedy. The objective of this course is to bring the participants to a satisfactory level of speaking, reading, and comprehension.

Participants study alone when they wish to. After three weeks, they will have practical experience in using French in real life settings: hotels, restaurants, streets...

The teaching consists of a three-hour daily course during six weeks (except Saturdays and Sundays) in a group composed of a maximum of 12 students.

Optional activities in the afternoon and evening, designed progressively to create immersion in French, socially, culturally, as well as linguistically, will be offered.

The Course carries eight undergraduate credits.

Full-time residence at the school is not compulsory for residents of the Montréal region.

Texts will be distributed at the beginning of the session.

Aïda Sadetsky

DIVISON B *(Undergraduate)*

La Division B est réservée aux étudiants **de 1er cycle non-francophones.**

Le programme normal est de quatre cours mais il est permis de suivre un cours en plus ou en moins. Chaque cours vaut 2 crédits, sauf pour certains qui valent 4 crédits.

Les étudiants plus avancés peuvent, après consultation avec le Directeur, suivre un cours de 2e cycle (Graduate) en Division C ou D.

Programme des cours en Division B

Langue

396-300L. Cours intensif de phonétique. Cours quotidien (5 heures par semaine). Exposé du système phonologique des sons et des habitudes articulatoires du français en fonction des difficultés de prononciation que rencontrent les non-francophones. Les étudiants seront classés selon leur niveau d'apprentissage: débutant, intermédiaire ou avancé.

Le laboratoire de langues sera ouvert aux étudiants du lundi au jeudi de 9h. à 17h. et le vendredi jusqu'à 12h.45. Des cassettes individuelles seront mises à la disposition des étudiants qui apporteront leur magnétophone.

Manuel: – J.-C. Lemyze, *À l'écoute du français,* (en vente au Secrétariat).

Jean-Claude Lemyze (3 sections)

396-302L. Français écrit. Ce cours s'adresse aux étudiants désireux de parfaire leur connaissance du français écrit. Il comportera des exercices de grammaire, des exercices systématiques de stylistique et des compositions.

Jany Hogue

396-304L. Composition. Exercices pratiques de dissertation française, avec révision des difficultés de la langue française et enrichissement du vocabulaire.

Textes: E. Bled, *Cours supérieur d'orthographe,* (Hachette, 1954). G. Fournier, *Comment composer mon devoir de français,* (Gigord, Paris, 1964).

T. Vuong-Riddick

396-311L. Traduction. Le cours sera consacré à la pratique de la traduction. À l'aide d'une série d'exercices et de textes portant sur des difficultés variées, nous essaierons de sensibiliser la classe aux problèmes de la traduction et de voir quelles solutions nous pouvons apporter. Les traductions se feront principalement vers le français, quelquefois vers l'anglais. Charge de travail: un texte à traduire seul chaque semaine.

Bernard Vidal

396-312L. Français fonctionnel. (niveau intermédiaire). Ce cours quotidien est essentiellement un cours de conversation et s'adresse aux étudiants qui ont déjà une certaine connaissance du français. Il comporte une révision de la grammaire et des principales structures de la langue

parlée. Des discussions en classe se feront autour de certains thèmes afin de développer l'expression spontanée et d'augmenter le vocabulaire usuel.

Charge de travail en dehors des cours: Exercices écrits et lecture.

Jany Hogue (2 sections)

396-316L. Atelier d'écriture. Envie d'écrire une nouvelle, un roman ou un article de journal? Avez-vous vraiment envie d'essayer?

Amoureux de la prose bienvenus. Les étudiants doivent suffisamment bien écrire le français pour s'inscrire à ce cours.

Josiane Micner

396-320L. Français fonctionnel. (niveau avancé). Ce cours quotidien propose une approche globale de la langue écrite et orale: il a pour but de rendre les étudiants le plus possible autonomes dans leur apprentissage. Les étudiants devront se familiariser avec la presse écrite et radio-télévisée au Québec. Analyse de textes, résumés, animations, enquêtes et exposés à partir de sujets d'actualité.

Revision grammaticale.

Anne Brunelle (2 sections)

396-22L. Stylistique et grammaire comparées. Initiation à la traduction. Nous étudierons principalement les difficultés morphologiques du passage de l'anglais au français (prépositions, temps, stylistique, vocabulaire, etc.).

Bernard Vidal

396-335L. Théâtre en action. Ce cours s'adrese aux étudiants non-francophones qui s'intéressent au théâtre; il se propose la présentation d'un récital de vers à la mi-session, et d'une production théâtrale à la fin de la période.

Cette production aura comme point de départ une ou plusieurs pièces au choix des étudiants, parmi celles recommandées par le professeur.

Andréi Zaharia

Littérature

396-340L. Le théâtre de l'absurde. Ce cours se propose de définir le théâtre de l'absurde et la crise contemporaine des valeurs qui explique son apparition, de caractériser l'oeuvre des principaux auteurs et d'évaluer, avec le concours des étudiants, par des discussions libres, son importance et son influence sur le théâtre actuel.

Lectures obligatoires: Eugène Ionesco, *La cantatrice chauve. Les Rhinocéros. La soif et la faim.*

Lectures conseillées: E. Ionesco, *Notes et contrenotes* (Gallimard, 1966). *Martin Esslin, Théâtre de l'absurde* (Buchet-Chastel, 1971). *Colloque de Cerisy, Ionesco: Situation et perspectives* (Ed. Pierre Belfond, 1980).

Andrei Zaharia

396-341L. Le théâtre québécois contemporain. Après un bref survol historique sur l'évolution du théâtre au Québec depuis le début du siècle, on se proposera de dégager les composantes essentielles de quelques pièces jugées parmi les plus représentatives des vingt dernières années. La spécificité dramatique sera vue au travers des questions relatives à la langue québécoise et au caractère social du théâtre (et de la représentation théâtrale).

Textes: J. Barbeau, *Ben-Ur,* (Leméac). R.-D. Dubois, *Panique à Longueuil,* (Leméac). M. Tremblay, *Les Belles-soeurs, À toi, pour toujours, ta Mari-Lou.* (Leméac). D. Boucher, *Les Fées ont soif,* (Ed. Intermède).

Robert Saletti

Civilisation

396-380L. Connaissance du Québec. Ce cours de composition et de civilisation a pour but le perfectionnement du franÇais parlé et écrit, tout en mettant l'édutiant directement en contact avec la société québécoise d'aujourd'hui. Les étudiants se rendront par petits groupes visiter des institutions, et assisteront également à une variété de manifestations culturelles (pièces de théâtre, films, concerts, etc. . .).

Charge de travail: Comptes rendus écrits hebdomadaires d'une ou deux activités. Une période est prévue pour la discussion des comptes rendus corrigés.

Robert Saletti

396-390L. L'Essai québécois et l'idéologie nationaliste. Le cours se veut une analyse de la pensée nationaliste telle qu'elle s'est développée depuis le début du siècle chez plusieurs essayistes québécois. La lecture des textes sera essentiellement socio-historique. Des extraits polycopiés des textes suivants seront distribués et discutés en classe.

Lectures obligatoires: Jules-Paul Tardivel, *Pour la patrie,* (HMH). E. de Nevers, *L'Avenir du peuple canadien-français,* (Fides). L. Groulx, *Notre maître le passé,* Tome I, (Stanké, Québec 10/10). P. Vallières, *Nègres blancs d'Amérique* (Parti pris). F. Dumont, *La vigile du Québec, Octobre '70: l'impasse? (HMH). P. Vadeboncoeur, Chaque jour, l'indépendance,* (Leméac).

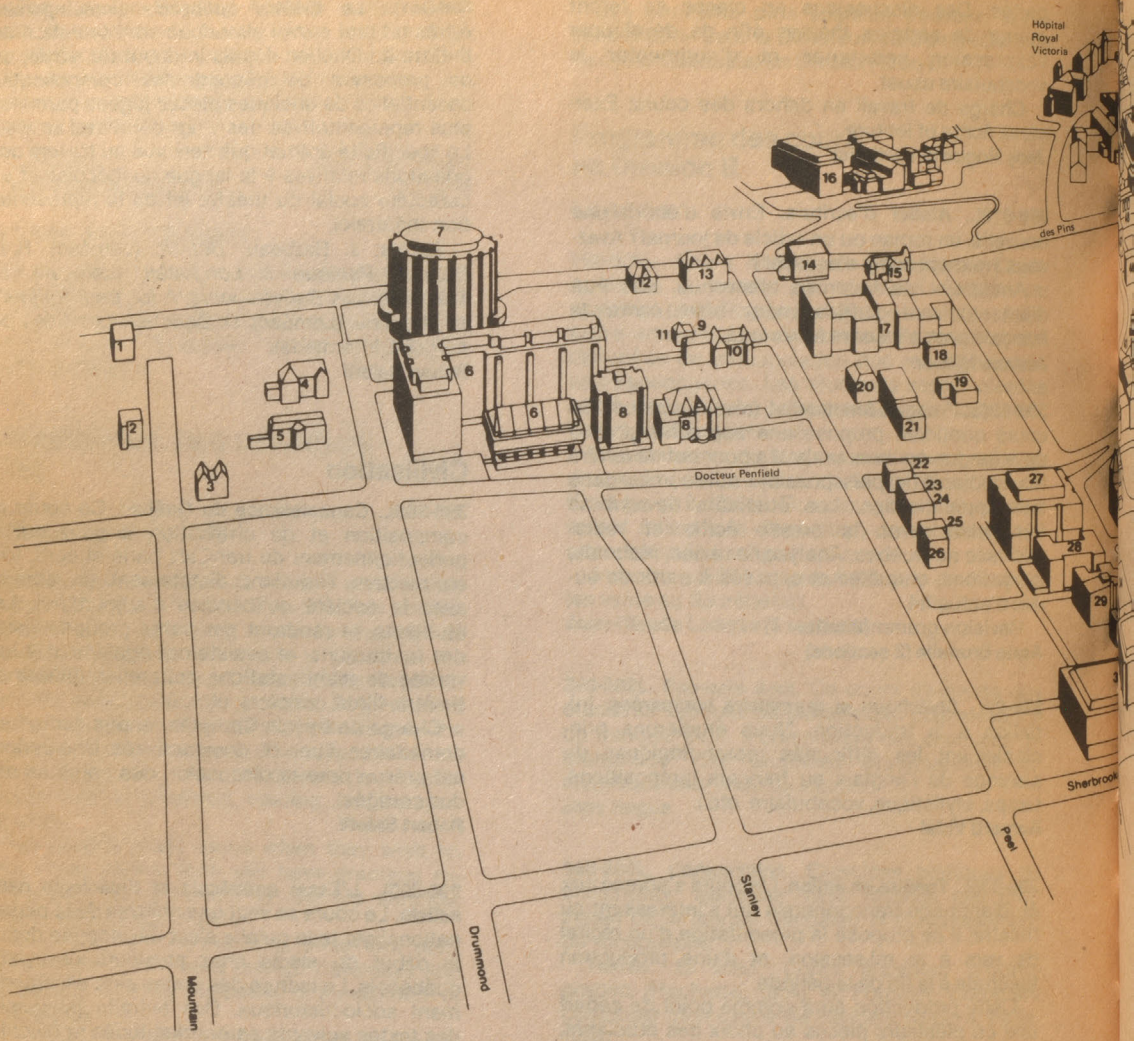
Robert Saletti

DIVISION C *(Graduate)*

Les cours de Division C sont réservés aux étudiants de 2e cycle qui ne poursuivent pas de Maîtrise à l'Université McGill.

Les étudiants inscrits en Division C sont autorisés à suivre des cours de Division D.

CAMPUS DE MONTRÉAL



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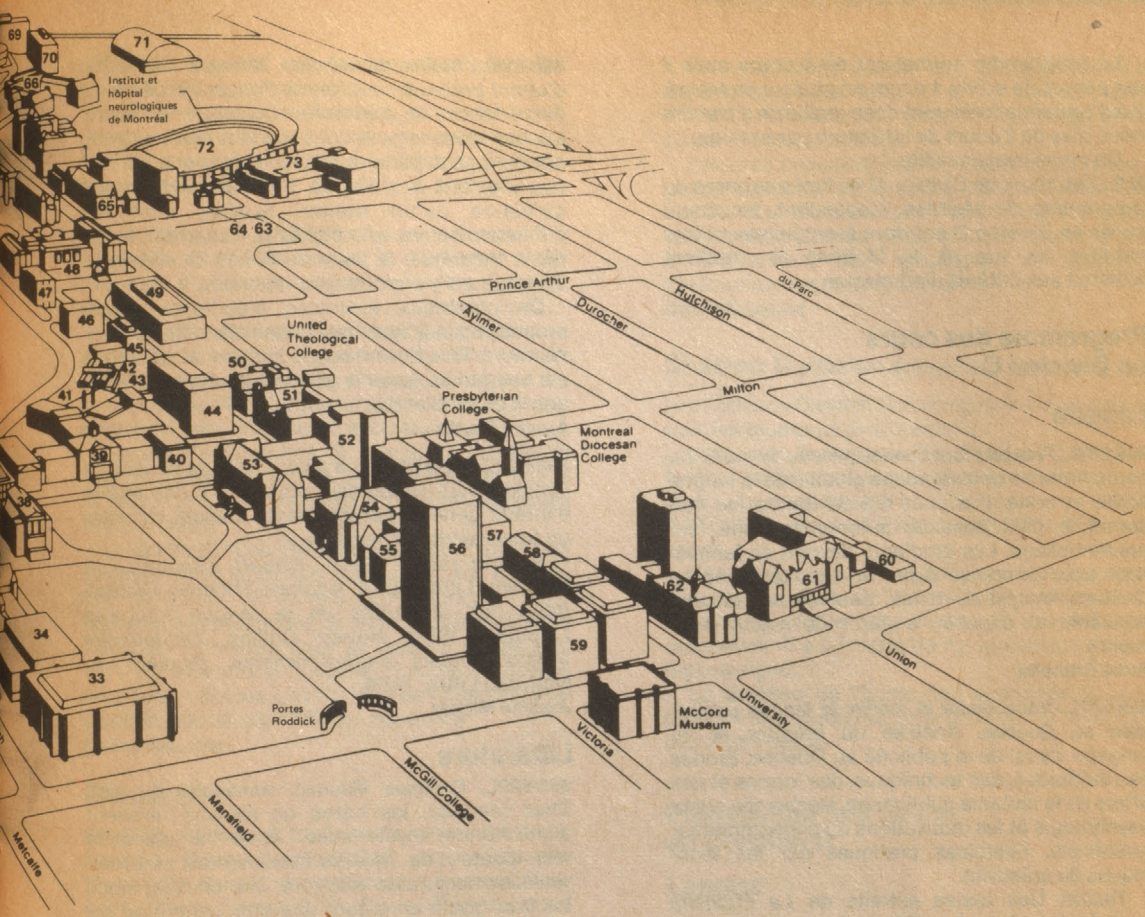

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7. PAVILLON McINTYRE DES SCIENCES MEDICALES
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12. MAISON CHARLES MEREDITH
13. MAISON LADY MEREDITH
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26. 3475, RUE PEEL
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51. PAVILLON WILSON
52. PAVILLON McCONNELL DE GENIE
53. PAVILLON MACDONALD DE GENIE
54. PAVILLON MACDONALD-HARRINGTON
55. PAVILLON MACDONALD DE PHYSIQUE
56. PAVILLON BURNSIDE
57. PAVILLON FRANK DAWSON ADAMS
58. INSTITUT DES PATES ET PAPIERS
59. PAVILLON OTTO MAASS DE CHIMIE
60. PISCINE GARFIELD WESTON
61. PAVILLON STRATHCONA DE MUSIQUE & SALLE DE CONCERT POLLACK
62. COLLEGE ROYAL VICTORIA
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64. 509 OUEST, AVENUE DES PINS
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69. PAVILLON MOLSON
70. PAVILLON McCONNELL
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72. STADE MOLSON
73. GYMNASE SIR ARTHUR CURRIE MEMORIAL

Le programme normal est de 4 cours mais il est permis de suivre 1 cours en plus ou en moins. Il est toutefois fortement déconseillé de s'inscrire dans plus de 2 cours de littérature par session.

Un cours vaut 2 crédits.

N.B.: Les cours de Division C ne font pas partie du programme de Maîtrise. Cependant, les cours suivis en Division D pourront éventuellement être crédités en vue de la Maîtrise si l'étudiant satisfait aux critères d'admission.

Programme des cours en Division C

Langue

396-503L. Français fonctionnel. (niveau avancé). Ce cours propose une approche globale de la langue écrite et orale: il a pour but de rendre les étudiants le plus possible autonomes dans leur apprentissage. Les étudiants devront se familiariser avec la presse écrite et radio-télévisée au Québec. Analyse de textes, résumés, animations, enquêtes et exposés à partir de sujets d'actualité.
Anne Brunelle

396-507L. Vocabulaire et média: la langue publicitaire au Québec. Analyse du français et du langage visuel de la publicité au Québec. Études des méthodes, des techniques, des formes et des effets de la réclame publicitaire. Recherche sur la psychologie et les motivations du consommateur québécois. Exercices pratiques sur les techniques de créativité.

Textes: Des textes extraits de *La Publicité québécoise* et de *Les 36 cordes sensibles des Québécois* (Ed. Héritage 1976 à 1978) seront distribués durant la session.

Lectures conseillées: L. Bogart, *La Stratégie publicitaire.* (Strategy in Advertising, 1967), trad. E. de Saint-Simon (Paris, 1971). F. Enel, *L'Affiche, Fonctions, Langage, Rhétorique,* (Mame 1971). M. Dubois, *La publicité, principes et méthodes,* (Marabout Service, 1973).
Agathe Martin.

396-509L. Linguistique descriptive. Ce cours a pour but de permettre à l'étudiant de se familiariser avec divers aspects de la linguistique. Des disciplines telles que la phonétique, la phonologie, la morphologie, la lexicologie, la syntaxe, la sémantique, la stylistique et la sociolinguistique y seront définies et expliquées. Ce cours comportera un certain nombre de travaux pratiques.

Manuel: G. Connolly, *Linguistique descriptive,* (Guérin, Montréal, 1978).

Lectures conseillées: J. Lyons, *Linguistique générale,* (Larousse, Paris, 1970).

H.A. Gleason, *Introduction à la linguistique,* (Larousse, Paris, 1969).

N. Chomsky et M. Halle, *Principes de phonologie générative,* (Seuil, Paris, 1973).
Anne Brunelle

396-510L. Atelier de création littéraire. Ce cours, d'abord pratique veut fournir l'occasion de tenter l'expérience de l'écriture. Qu'est-ce qu'écrire, quelles idées reçues sous-tendent cette activité, qui écrit pour parler à qui, qu'est-ce que le "textuel", qu'ont à y voir la tradition et l'histoire, qu'est-ce qu'un atelier, quelles sont les différences entre le/la poétique, le narratif, le fictif, le théorique, le texte de scène, la chanson? On tentera d'y apporter des réponses.

De nombreux exercices d'écritures seront proposés ainsi que des textes de réflexion sur l'écriture. Une bonne connaissance de la langue est obligatoire, avoir le goût est souhaitable ainsi que "l'esprit d'atelier".
Agathe Martin

396-512L. Traduction. La traduction qui se fera de l'anglais vers le français portera sur des textes d'intérêt général. Les étudiants devront remettre un travail écrit par semaine.

Bibliographie: Petit Robert (Société du Nouveau Littré, 1973). Adolphe Thomas, *Dictionnaire des difficultés de la langue française* Larousse 1971). Robert Collins, *Dictionnaire français/anglais anglais/français,* (Société du Nouveau Littré, 1978).
Josiane Micner

Littérature

396-520L. François Mauriac, romancier du réel. Chez Mauriac, les héros de romans naissent d'une "union mystérieuse" entre l'artiste et le réel. L'auteur de *Thérèse Desqueyroux* sait merveilleusement nous suggérer les choses, nous les faire sentir en créant une atmosphère où les odeurs de la terre, où l'approche de l'orage, un vol de palombes sont source de poésie. Nous proposerons diverses lectures des oeuvres choisies qui permettront de dégager l'originalité profonde de Mauriac, et de cerner son apport à l'art romanesque de son temps.

Lectures obligatoires: F. Mauriac, *Le Désert de l'amour. Thérèse Desqueyroux. Le Mystère Frontenac. Le Romancier et ses personnages.* (Livre de poche).

Lectures conseillées: Nelly Cormeau, *L'Art de François Mauriac,* (Grasset, Paris, 1951). *Correspondance André Gide — François Mauriac* Ed. par J. Morton. "Cahiers André Gide" 2, (Gallimard, 1971). *Correspondance François Mauriac – Jacques-Émile Blanche* Ed. par G.-P. Collet, (Grasset, Paris, 1976). J. Lacouture, *François Mauriac* (Seuil, Paris, 1980). C. Mauriac, *La Terrasse de Malagar* (Grasset, Paris, 1977). J.-P. Sartre, "Mauriac et la liberté" *Situations 1* (Gallimard). André Seailles, *Mauriac,* (Bordas, Paris, 1972). P.-H. Simon, *Mauriac par lui-même* (Seuil, Paris, 1953).
Georges-Paul Collet

396-351L. Michel Tremblay ou le théâtre de la récrimination. À travers la lecture critique de trois pièces de Michel Tremblay, il s'agira de saisir les

différents aspects du discours récriminatoire caractéristique de l'oeuvre de l'auteur.

Les personnages de Tremblay sont porteurs de rôles typéfiés qui visent à donner une représentation ironico-tragique des traits culturels attribués à la classe populaire québécoise en milieu urbain.

Les thèmes privilégiés sont la pauvreté matérielle, la misère morale, la médiocrité intellectuelle et l'incommunicabilité entre les humains.

Par la présentation d'une typologie des personnages, on tentera de reconstituer les éléments de la dynamique interne de chaque pièce par laquelle se justifie l'impasse dont toute l'oeuvre cherche à dénoncer les conséquences.

Lectures obligatoires: M. Tremblay, *Les Belles soeurs,* (Leméac, Mtl., 1972). *À toi, pour toujours, ta Marie-Lou,* (Leméac, Mtl, 1971). *Les anciennes odeurs.* (1981).

L. Mailhot' *"Les Belles-soeurs ou l'enfer des femmes"* (Revue *Études françaises*, vol. 6, no 1, fév. 1970, pp: 96 à 104). J.-P. Ryngaert, *"Du réalisme à la théâtralité: la dramaturgie de Michel Tremblay",* (Revue *Livres et auteurs québécois*, 1971, pp: 97 à 108). A Turcotte, *"Les Belles-soeurs en révolte",* (Revue *Les Cahiers de l'Université du Québec*, nos 22, 23, 1970, pp: 183 à 199).

Céline Beaudet.

Civilisation

396-550L. Cinéma. À partir de l'analyse des films français (Alain Robbe-Grillet, Alain Resnais, Marguerite Duras), et québécois (Jacques Godbout, Pierre Perreault, A.-Claire Poirier), nous examinerons les concepts de base de la méthode goldmanienne appliquée à l'étude du cinéma contemporain.

Lectures obligatoires: L. Goldmann, *La création culturelle dans la société moderne* (Ed. Denoël, 1971). A. Goldmann, *Cinéma et société moderne* (Ed. Anthropos, 1971). G. Marsolais, *L'Aventure du cinéma direct,* (Seghers, 1974). Revue Sociologie et sociétés *Pour une sociologie du cinéma,* vol. 8 no 1, avril 1976.

Thuong Vuong-Riddick

396-561L. Sociologie de la famille québécoise dans le roman populaire (au tournant de la guerre). Le contenu de la thématique familiale à l'oeuvre dans trois grands romans populaires québécois: *Le Survenant, Les Plouffe* et *Élise Velder.*

Chaque roman sera examiné en fonction de la vision qu'il propose de la famille québécoise en tant que mode de vie traditionnnel et lieu dépositaire des valeurs prescrites par la société englobante.

L'objectif est de cerner les grandes articulations du discours sur la famille, d'en saisir les contradictions et la cohérence, dans la perspective d'une meilleure connaissance de la société québécoise à la veille de la révolution tranquille.

Lectures obligatoires: G. Guévremont, *Le Survenant,* (Fides, Mtl, 1974). R. Lemelin, *Les Plouffe,* (La Presse, Mtl, 1973). R. Choquette, *Élise Velder,* (Fides, Mtl, 1973).

Lectures conseillées: J.-M. Piemme, *La propagande inavouée,* (10/18, Paris, 1975). J.-L. Roy, *La marche des Québécois; le temps des ruptures: 1945 à 1960,* (Leméac, Mtl, 1976). D. Monière, *Le développement des idéologies au Québec,* (Québec/Amérique, Mtl, 1977).

Céline Beaudet

Division D *(Maîtrise avec ou sans thèse)*

Les cours de Division D sont également ouverts à tous les étudiants de Division C.

Remarque importante: En Division D le professeur prend pour acquis que les étudiants ont déjà lu et connaissent bien les «Lectures OBLIGATOIRES» et «LECTURES CONSEILLÉES» du cours.

En règle générale, il est déconseillé de suivre plus de deux cours de littérature par session.

Dans la plupart des cours, le travail exigé représente 15 à 20 pages dactylographiées à double interligne.

Le **directeur** de l'École doit approuver le programme des étudiants de la division "D" *avant* le début des cours.

Programme des cours en Division D

Langue

396-604L. Phonétique générale. Description articulatoire et acoustique des principaux sons du français et de l'anglais. Phénomènes liés à la coarticulation, à l'accentuation et au débit. La norme phonétique et ses incidences sociolinguistiques.

Lecture obligatoire: P. Ladefoged, *A Course in Phonetics,* (Harcourt Brace Jovanovich, Inc., New York, 1975).

Laurent Santerre

396-606L. Aspects sociolinguistiques du français. Ce cours portera sur les rapports existant entre les faits linguistiques et les faits sociaux. Nous étudierons certains travaux empiriques et théoriques portant sur des problèmes tels que les niveaux de langue, les paramètres linguistiques et extra-linguistiques entraînant la variabilité, les attitudes linguistiques et la norme dans la société. En guise de conclusion, nous nous interrogerons sur le type de français qu'on devrait enseigner au Québec.

Lectures conseillées: Pierrette Thibault, *Le Français parlé études sociolinguistiques,* (Linguistics Research, Edmonton, 1979).

W. Labov, *Sociolinguistique,* (Ed. de Minuit, Paris, 1976).

Laurent Santerre

396-620L. Le français Québécois, une langue ou un dialecte. Comparaison des systèmes phonologiques français et québécois. Les variphones. La diphtongaison des voyelles longues et la chute des voyelles brèves. La chute des consonnes. Principaux traits morphologiques et syntaxiques.

N.B. On devrait déjà avoir suivi un cours de linguistique générale.

Lectures: A.-M. Houdebine, *Français régional ou français standard", (Studia Phonetica,* no. 13, Didier, 1977, pp. 35-63).

A.-M. Houdebine, *La Variété et la dynamique d'un français régional.* (Thèse de doctorat d'État, Paris, 1978).

L. Santerre, *Deux E et deux A phonologiques en Français québécois," Le français de la région de Montréal. (Cahier de linguistique,* no. 4 P.U.Q., 1974, pp. 117-145).

L. Santerre, *"Comparaison des E et des A en québécois et en français". Vingt-cinq ans de linguistique au Canada.* (en coll. centre Éducatif et Culturel, Inc., Montréal, 1979, pp. 325-361).

L. Santerre, *"Diphthongization in Montréal French". Linguistic Variation,* (D. Sankoff, éd., Academic Press, 1978, pp. 173-184).
Laurent Santerre

Littérature

396-632L. Montaigne et nous. La grande tradition des moralistes français n'aurait pas été ce qu'elle est si elle ne s'était pas alimentée à la source essentielle que constitue l'oeuvre de Montaigne. De Pascal à Gide, en passant par La Rochefoucauld ou La Bruyère, tous ont contracté une dette envers l'auteur des Essais. Le livre de Montaigne est si vaste que l'on sera contraint de ne prendre en considération que quelques chapîtres, choisis parmi les plus significatifs: "Que philosopher c'est apprendre à mourir" (I, 20), "Apologie de Raymond Sebond" (II, 12), "De la physionomie" (III, 12), "De l'expérience" (III, 13). En raison de la difficulté que présente l'étude de ces textes dans le domaine de la langue, il est indispensable que les étudiants en aient pris connaissance avant le début même du cours.

Texte obligatoire: Essais (coll. Garnier-Flammarion, 3 vol.).

Lectures conseillées: P. Moreau, *Montaigne, l'homme et l'oeuvre,* E. Marcu, *Répertoire des idées de Montaigne,* (Droz). Plattard, *Montaigne et son temps.* P. Villey, *Les sources et l'évolution des Essais.* F. Jeanson, *Montaigne par lui-même.* A. Cresson, *Montaigne, sa vie, son oeuvre,* (PUF). Dreano, *La pensée religieuse de Montaigne,* (Beauchesne). Conche, *Montaigne ou la conscience heureuse,* (Seghers). F. Gray, *Le style de Montaigne,* (Nizet).
Maurice Descotes

396-642L. Pascal: le tragique de l'existence. Renonçant à la science et à la polémique, Pascal se retire dans la solitude pour méditer sur la destinée humaine et lire Montaigne et saint Augustin. Il recherche par là une certitude qui lui échappe, et qu'il trouve seulement dans l'abandon à la foi.

Lectures obligatoires: Pascal, *Pensées,* (Ed. Philippe Sellier, Mercure de France).

Lectures conseillées: J. Mesnard, *Pascal, l'homme et l'oeuvre* (Hatier). A. Béguin, *Pascal par lui-même* (Seuil). H. Gouhier, *Blaise Pascal, commentaires* (Vrin). J. Mesnard, *Les Pensées de Pascal* (SEDES/CDU). P. Sellier, *Pascal et saint Augustin* (A. Colin).
Roger Mercier

396-643L. Actualité de Racine. La tragédie est-elle un genre dépassé? À une époque où le théâtre se soucie de plus en plus d'être "populaire", de jouer un rôle dans les engagements politiques, de promouvoir des expériences de création collective, quel intérêt peut bien encore présenter la tragédie, genre aristocratique, dégagé de l'histoire contemporaine et où se manifeste la prééminence de ce que G. Baty appelait "Sire le Mot"? À travers l'étude d'*Andromaque* et de *Bajazet,* on s'appliquera à déterminer quel enrichissement ce théâtre peut apporter au spectateur moderne.

Texte: Andromaque, Bajazet, (Bordas).

Lectures conseillées: R. Picard, *La carrière de Racine,* (NRF). P. Moreau, *Racine,* (Boivin). E. Vinaver, *Vers le vrai Racine,* (Manchester Univ. Press). M. Descotes, *Les Grands rôles du théâtre de Racine,* (PUF). R. Jasinski, *Vers le vrai Racine,* (Colin). P. Butler, *Classicisme et baroque dans l'oeuvre de Racine,* (1959). M. Descotes, *Racine,* (Ducros).
Maurice Descotes

396-653L. Beaumarchais, prophète du changement. Avec celui de Marivaux, le répertoire de Beaumarchais demeure le seul qui soit resté vivant de tout le théâtre du XVIIIe siècle. Il le doit d'abord à sa gaîté franche et efficace qui restitue au genre comique sa véritable vocation. Mais cette gaieté n'est pas inoffensive: avec Beaumarchais le rire n'efface pas la réflexion sur des problèmes qui, pour être d'une autre époque, n'en sont pas moins étonnamment modernes. À travers l'étude du *Barbier de Séville* et du *Mariage de Figaro,* on découvrira la richesse et l'actualité d'une oeuvre dont la principale caractéristique est sans doute la jeunesse.

Textes: le Barbier de Séville, le Mariage de Figaro, (Bordas).

Lectures conseillées: B. Fay, *Beaumarchais,* (Perrin). R. Pomeau, *Beaumarchais, l'homme et l'oeuvre,* (Hatier). J. Schérer, *La Dramaturgie de Beaumarchais,* (Nizet). P. Van Thieghem, *Beaumarchais par lui-même,* (Seuil). M. Descotes, *Les Grands rôles du théâtre de Beaumarchais,* (PUF).
Maurice Descotes

396-652L. Diderot: la philosophie devant le monde. Diderot est le défenseur d'une philosophie matérialiste et déterministe qui semble devoir condamner l'homme à l'impuissance. Par l'écriture romanesque, en cherchant à cerner les déterminations de la volonté, il crée en marge (ou à l'aide) de la réalité une humanité vivante et libre, en même temps qu'une oeuvre où s'affirme sa propre liberté.

Lecture obligatoire: Diderot, *Jacques le fataliste,* (Paul Vernière, Ed. Garnier-Flammarion).

Lectures conseillées: Jacques le fataliste, (Ed. par Simone Lecointre et Jean Le Gailliot, (Droz). A. D. Wilson, *Diderot* (en anglais), (Oxford, Un. Press, New York). J. Chouillet, *Diderot* (SEDES/CDU). J. Scherer, *Le Cardinal et l'oran-outang* (SEDES). R. Kempf, *Diderot et le roman, ou le démon de la présence* (Seuil). F. Pruner, *L'Unité secrète de Jacques le fataliste* (Minard).

Roger Mercier

396-662L. Le Théâtre romantique français. Explication du romantisme et du théâtre romantique français. Origines. Trois caractéristiques. Romantisme et catholicisme. Romantisme et révolution. La Bataille d'Hernani. Importance dans l'histoire de la culture française.

Principaux auteurs et principales oeuvres: Ruy Blas, de Victor Hugo, est-il encore actuel? (débat).

Influence du théâtre romantique sur les auteurs français contemporains.

Lectures obligatoires: V. Hugo, *Hernani, Ruy Blas.* A. de Musset, *On ne badine pas avec l'amour. Lorenzaccio.* A. de Vigny, *Chatterton.* Prosper Mérimée, *Le carosse du Saint Sacrement.*

Lectures conseillées: Vito Pandolsi, *L'Histoire du théâtre,* vol. 3. Louis Jouvet, *Tragédie classique et théâtre du 19e siècle* (Ed. Gallimard, Paris, 1968). Lucien Dubech, *Histoire générale illustrée du théatre,* vol. IV (Ed. Librairie de France). Guy Dumur, *L'Histoire des spectacles* (Ed. de La Pléiade, Gallimard, 1965).

Andréi Zaharia

396-663L. Rimbaud: le poète voyant. Rebelle contre la société et contre la tradition littéraire, Rimbaud se dégage de toutes les entraves à l'imagination et expérimente hallucinations et fantasmes, aventure d'où il sortira pour finir dans la réalité la plus terre à terre.

Lectures obligatoires: Rimbaud, *Poésies,* (Ed. par Louis Forestier, Gallimard-Poésie).

Lectures conseillées: M. Raymond, *De Baudelaire au surréalisme* (José Corti). Yves Bonnefoy, *Rimbaud par lui-même* (Seuil). H. Miller, *Rimbaud.* J. Richer, *L'Alchimie du verbe de Rimbaud* (Didier). Etiemble, *Le Mythe de Rimbaud* 2 vol. (Gallimard).

Roger Mercier

396-673L. Paul Valéry et l'art. Depuis son mariage (en 1900) avec Jeannie Gobillard, nièce de Berthe Morisot, Valéry a vécu dans l'entourage d'artistes illustres. Il nous a laissé des pages capitales sur Corot, Degas, Manet, sur l'architecture, sur "Pensée et art français", etc.

Le cours aura pour objet, notamment, d'analyser l'attitude de Valéry face à la peinture, au dessin, à la gravure, à la danse, etc., puis de dégager les grandes lois d'une esthétique.

Lectures obligatoires: Paul Valéry, "Eupalinos ou l'architecte" in *Dialogues.* "L'Ame et la danse" in *Dialogues.* "Pièces sur l'art". Ces textes se trouvent dans Oeuvres II, Bibliothèque de la Pléiade.

Lectures conseillées: J. de Bourbon-Busset, *Paul Valéry ou le mystique sans Dieu* (Plon, Paris, 1964). G.-P. Collet, "Paul Valéry et Jacques-Émile Blanche" *Bulletin du Bibliophile,* 1978, IV et 1979, I (Paris). *Correspondance André Gide-Paul Valéry,* (Gallimard, Paris, 1955). *Correspondance Paul Valéry - Gustave Fourment* (Gallimard, Paris, 1957). L. Tauman *Paul Valéry ou le mal de l'art* (Nizet, Paris, 1969). P. Valéry, *Lettres à quelques-uns,* (Gallimard, Paris, 1952).

Georges-Paul Collet

396-674L. André Gide, "le contemporain capital". Pourquoi le peintre André Rouveyre a-t-il appelé Gide "le contemporain capital"? En nous appuyant essentiellement sur le *Journal* et sur quelques autres oeuvres majeures de l'écrivain, dont certaines *Correspondances,* nous essayerons d'en discerner les raisons profondes.

Nous étudierons, par exemple, l'une ou l'autre des questions suivantes (le programme précis sera fixé au début du cours en accord avec les étudiants): Gide et l'écriture Gide et la musique Gide et la peinture Gide, critique Gide, moraliste Gide et l'autobiographie Gide et la notion d'engagement politique Gide et la littérature anglo-saxonne Gide et le journal intime.

Lectures obligatoires: A. Gide, *Journal* 1889-1939 Bibliothèque de La Pléiade, pages 13 à 606. *"Si le grain ne meurt,* (Folio).

Lectures conseillées: Germaine Brée, *André Gide l'insaisissable Protée,* (Les Belles Lettres, Paris, 1953). *Correspondance A. Gide - J.-E. Blanche* (Ed. par G.-P. Collet), "Cahiers A. Gide" 8, (Gallimard, 1979). *Correspondance A. Gide - R. Martin du Gard* (Ed. par J. Delay), (Gallimard, 1968). *Correspondance A. Gide - P. Valéry* (Ed. par R. Mallet) (Gallimard, 1955). A. Gide, *Thésée,* (Gallimard). C. Martin, *Gide par lui-même* (Seuil, Paris, 1963). *La Maturité d'André Gide* (Klincksieck, Paris, 1977).

Georges-Paul Collet

396-683L. Jacques Godbout, romancier. Poète, romancier, cinéaste, chroniqueur, Jacques Godbout, illustre, par son oeuvre, les multiples facettes et les étapes signifiantes de l'évolution d'un écrivain québécois moderne. Au cours du séminaire nous étudierons en particulier les cinq romans publiés, de *l'Aquarium* à *L'isle au dragon.*

Lectures obligatoires: J. Godbout, *L'Aquarium,* (Ed. du Seuil, Paris, 1962). *Le couteau sur la table,* (Ed. du Seuil, Paris, 1965). *Salut Galarneau,* (Ed. du Seuil, Paris, 1967). *D'Amour,* (HMH, P.Q., 1972 et Ed. du Seuil, Paris). *L'isle au dragon,* (Ed. du Seuil, Paris 1976).

Lectures conseillées: A. Smith, *L'Univers romanesque de Jacques Godbout,* (Ed. Aquilla, 1976. *Voix et Images du pays* vol. 5, no. 1 Automne 1979).

T. Vuong-Riddick

396-684L. Théorie et féminin dans le texte narratif québécois. Depuis un corpus à la fois historique (la littérature féminine du dernier siècle au Québec) et théorique (textes-jalons permettant d'interroger ou de problématiser certaines notions) ce cours porte sur la question du féminin et sur l'écriture.

Réflexion sur la problématique actuelle de cette question, analyse des archétypes / stéréotypes proposés dans la littérature québécoise des femmes, étude dans la textualité narrative féminine de l'évolution du procès d'énonciation ainsi que de la conception du sujet de la fiction. Approche linguistique, textuelle, idéologique, psychanalytique.

Lectures obligatoires: Différents textes polycopiés distribués en classe. Laura Conan, *Angéline de Montburn,* (Fides). Thérèse Renaud, *Les Sables du rêve,* (Les Herbes Rouges). Anne Hébert, *Les enfants du Sabbat,* (Seuil). Monique Larue, *La Cohorte fictive,* (L'Étincelle). Madeleine Gagnon, *Lueur roman archéologique,* (Éditeur VLB). Louky Bersianik, *Le Pique-nique sur l'Acropole,* (Éditeur VLB). Carole Massé, *Dieu,* (Les Herbes Rouges). Nicole Brossard *L'Amer ou le Chapitre effrité,* (Ed. Quinze).

Lectures conseillées: Denise Boucher, *Les fées ont soif,* (Ed. Intermède). *La Barre du jour: Les corps, les Mots l'Imaginaire* (Mai-août, 1977). Madeleine Ouellette-Michalska, *L'Échappée des discours de l'oeil,* (Nouvelle Optique).

Agathe Martin

Critique littéraire

396-702L. Méthodologie du commentaire des textes littéraires. Lorsqu'il est amené à commenter un texte littéraire, l'étudiant (et souvent même le professeur) se trouve souvent embarrassé pour déterminer la manière dont il abordera et présentera cette étude de texte. Il n'existe sans doute pas, en cette matière, de "méthode" qui ait valeur de panacée. Il est néanmoins possible de préciser les difficultés inhérentes à ce genre d'exercices, ensuite de prendre en considération les différents modes de lecture applicables à un texte.

Ce cours aura donc un objectif éminemment pratique. À partir d'un certain nombre d'exemples aussi divers que possible (choisis dans la littérature française des XIXe et XXe siècles), il tendra à fournir un éventail de méthodes appropriées aux différents types de textes qui peuvent être soumis à un commentaire.

Des textes ronéotypés seront distribués aux étudiants au début de la session.

Maurice Descotes

396-703L. La critique littéraire, du discours au texte. Depuis un bref état présent des approches et méthodes critiques telles que pratiquées par la critique universitaire, depuis une réflexion menée sur les fonctions, les limites et la spécificité du discours critique, ce cours analyse différents textes critiques québécois, anciens et modernes, littéraires surtout, artistiques ou sociologiques à l'occasion.

La critique sera également envisagée comme partie prenante du travail de création littéraire, dans la prise en charge en particulier des fonctions métalinguistique et poétique du langage.

Documents audios, textes polycopiés distribués en classe, au moins un travail de création.

Lectures obligatoires: Jacques Dubois, *L'Institution de la littérature,* (Nathan). Michel Adam, *Linguistique et discours littéraire,* (Larousse).

Lectures conseillées: Les chemins actuels de la critique, (10/18). Roland Barthes, *Critique et vérité,* (Seuil). France Vernier, *L'Écriture et les textes,* (Ed. Sociales).

Agathe Martin

Civilisation

396-781L. Les grands voyages et la réflexion philosophique. Le voyage est le lieu de la découverte de l'autre. Mais si le voyageur n'emporte pas des images toutes faits, il découvre qu'il est lui-même l'autre de l'autre, et par un retour sur soi il est amené à remettre en question les fondements de sa pensée et de sa société.

Lectures obligatoires: J.B. Tavernier, *Les Six Voyages en Turquie et en Perse,* 2 vol. (F. Maspero). La Hontan, *Dialogues avec un sauvage* (Ed. Maurice Roelens, Ed. Sociales). La Condamine, *Voyage sur l'Amazone* (F. Maspero). Raynal, *Histoire philosophique et politique des deux Indes* (F. Maspero).

Lectures conseillées: Numa Broc, *La Géographie des philosophes* (Champion). Michèle Duchet, *Anthropologie et histoire au siècle des Lumières* (F. Maspero). G. Chinard, *L'Amérique et le rêve exotique dans la littérature française au XVII et au XVIIIe siècles* (Hachette-Champion). Marie-Louise Dufrênoy, *L'Orient romanesque en France* (1704-1789), 2 vol. (Montréal, Beauchemin).

Roger Mercier

396-790L. Civilisation québécoise. Étude de la civilisation québécoise de 1945 à nos jours. Les différents aspects de la vie historique, sociale, économique et culturelle seront étudiés sous forme d'exposés, d'analyses d'oeuvres littéraires et de films.

Lectures obligatoires: M. Rioux, *La question du Québec* (Ed. Parti pris). A. Memmi, *Portrait du colonisé précédé du portrait du colonisateur* (Ed. de l'Étincelle). R. Lemelin, *Les Plouffe.* G. Carle, *La Vie bienheureuse de Léopold Z.* (film). Deux épisodes dans la vie d'Hubert Aquin par J. Godbout (film). D. Monière, *Le Développement des idéologies au Québec* (Amérique / Montréal, 1977).

Thuong Vuong-Riddick

TABLEAU RÉCAPITULATIF

LANGUE

396-604L. Phonétique générale
396-606L. Aspects sociolinguistiques du français.
396-620L. Le français québécois, une langue ou un dialecte

LITTÉRATURE FRANÇAISE

XVIe siècle

396-632L. Montaigne et nous

XVIIe siècle

396-642L. Pascal: le tragique de l'existence
396-643L. Actualité de Racine

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396-652L. Diderot: la philosophie devant le monde
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XIXe siècle

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396-781L. Les grands voyages et la réflexion philosophique.
396-790L. Civilisation québécoise

CRITIQUE LITTÉRAIRE

396-702L. Méthodologie du commentaire des textes littéraires
396-703L. La Critique littéraire, du discours au texte

RÉGLEMENTATION DE LA MAÎTRISE

Les études en vue de la Maîtrise en français à l'École française d'été s'effectuent sous la responsabilité de la Faculté des études supérieures et de la recherche de l'Université McGill en coordination avec le Département de langue et littérature françaises.

MAÎTRISE SANS MÉMOIRE

La scolarité totale est de 24 cours pour les étudiants admis à la session préliminaire (Da) et de 20 cours pour les étudiants admis en première année de Maîtrise (D1). Cette scolarité s'accomplit en quatre, cinq ou six sessions d'été, selon les modalités précisées plus bas; elle équivaut à deux années de scolarité à temps plein.

MAÎTRISE AVEC MÉMOIRE

Les étudiants désireux de préparer une Maîtrise avec mémoire peuvent accomplir leur scolarité à l'École française d'été avant de s'inscrire au Département de langue et littérature françaises de l'Université McGill. Cette scolarité s'accomplit en trois ou quatre sessions et comporte 12 ou 16 cours selon que l'étudiant est admis en D1 ou en Da.

Les deux Maîtrises (avec mémoire et sans mémoire) sont équivalentes sur le plan académique et confèrent à leur titulaire les mêmes droits. Toutefois, les étudiants qui envisagent de poursuivre des études de Doctorat au Département de langue et littérature françaises de l'Université McGill devront obtenir une Maîtrise avec mémoire.

Le choix entre la Maîtrise sans mémoire ou avec mémoire peut se faire en tout temps après la troisième année (D3).

CONDITIONS D'ADMISSION

Les admissions sont prononcées après examen des dossiers par le Comité d'admission. Les étudiants titulaires d'un B.A. avec spécialisation en français (B.A. Honours) de l'Université McGill, d'un diplôme équivalent en français d'une autre université, d'une Licence ou d'un Baccalauréat spécialisé avec une concentration équivalente en français et des notes jugées satisfaisantes, sont admis directement en première année de Maîtrise (D1), après examen de leur dossier.

Les étudiants titulaires d'un B.A. ou d'un diplôme équivalent et qui ne répondraient pas aux conditions précédentes pourront être admis à suivre une session préliminaire (Da).

RÉGIME DES ÉTUDES

Une session d'été comporte normalement 4 cours. À partir de D2, les étudiants pourront suivre 5 cours s'ils ont obtenu une moyenne de 77% calculée sur leurs quatre meilleurs résultats à la session précédente. Les étudiants admis en D1 de même que ceux qui ne répondraient pas à cette exigence de moyenne ne seront autorisés à suivre 5 cours par session qu'après examen de leur dossier.

L'attention des étudiants est cependant attirée sur le fait que suivre 5 cours par session constitue une scolarité lourde et que 4 cours doivent être considérés comme la norme.

Les étudiants de Maîtrise de l'École française d'été sont admis à la Faculté des études supérieures et de la recherche dès la première année (Da ou D1). Ils sont autorisés à suivre au Département de langue et littérature françaises de l'Université McGill un maximum de 12 crédits (4 demi-cours ou 2 cours annuels) qui équivalent à 6 cours de l'École française d'été.

Les étudiants désireux de se prévaloir de cette disposition doivent choisir leurs cours en fonction des exigences de la Maîtrise et demander au Directeur de l'École une autorisation écrite dans les premiers jours de septembre.

Tout au long de leur scolarité de Maîtrise, les étudiants doivent se **réinscrire** à l'École chaque année.

Échecs: toute note inférieure à B — (65%) constitue un échec. Trois échecs au cours de la scolarité de Maîtrise entraînent l'élimination après examen du dossier.

SCOLARITÉ DE LA MAÎTRISE

SESSION PRÉLIMINAIRE (Da)

Les cours sont les mêmes que ceux des autres sessions.

Les étudiants doivent suivre 4 cours dont:

un cours de Langue
un cours de Littérature française
un cours de Littérature québécoise
un cours de Civilisation

N.B.: Les étudiants non-francophones devront satisfaire à un examen portant sur leur connaissance du français écrit et oral. Ce test sera administré au cours de la première session et, en cas de résultats insuffisants, des cours de langue supplémentaires pourront être imposés.

MAÎTRISE SANS MÉMOIRE

Les étudiants ayant accompli leur session préliminaire ou admis directement en première année (D1) doivent suivre 20 cours de Division D répartis en quatre ou cinq sessions et comportant.

5 cours de langue
6 cours de Littérature, dont:
- 1 cours de Littérature du Moyen Age ou du XVIe siècle
- 1 cours de Littérature du XVIIe siècle
- 1 cours de Littérature du XVIIIe siècle
- 1 cours de Littérature du XIXe siècle
- 1 cours de Littérature française du XXe siècle
- 1 cours de Littérature québécoise du XXe siècle

2 cours de Civilisation
7 cours au choix.

MAÎTRISE AVEC MÉMOIRE

Les étudiants ayant accompli leur session préliminaire, ou admis directement en première année (D1), doivent suivre 12 cours de Division D en trois sessions:

3 cours de Langue
6 cours de Littérature (même répartition que pour la Maîtrise sans mémoire
1 cours de Civilisation
2 cours au choix.

Après avoir suivi les 12 cours requis à l'École française d'été, l'étudiant qui veut obtenir une Maîtrise avec mémoire doit demander le transfert de son dossier au Département de langue et littérature françaises. Il devient dès lors étudiant du Département et s'inscrit en M.A. II. Il doit suivre un demi-cours (de niveau 600) au Département, se choisir un Directeur de mémoire, faire approuver son sujet de mémoire par le Comité des études de 2e et 3e cycles, rédiger son mémoire d'après les exigences du Bureau des thèses de la Faculté des études supérieures et de la recherche.

ANNÉES DE SCOLARITÉ

La Maîtrise en français accomplie à temps partiel en plusieurs sessions à l'École française d'été et terminée au complet (24 cours) est officiellement reconnue par le Ministère de l'Éducation du Québec comme équivalente à deux années de scolarité à temps plein. Douze cours de maîtrise suivis et réussis à l'École française d'été sont officiellement reconnus pour une année de scolarité à temps plein.

FRAIS DE SCOLARITÉ

Les étudiants doivent acquitter tous les frais de scolarité (Tuition Fees) à chacune des sessions d'été auxquelles ils s'inscrivent. En D5 (et éventuellement en D6), les étudiants bénéficient d'un tarif réduit (voir Tuition Fees and Residence Charges, p. 8).

EMPLOI DU TEMPS

Division "B"

Horaire	Lundi – Mercredi – Vendredi	Horaire	Mardi – Jeudi
9h. à 10h.	396-312L. **F. fonct., int. I** (QUOTIDIEN) 396-390L. **Essai québécois**	9h. à 10h.30	396-304L. **Composition**
10h. à 11h.	396-300L. **Phonétique I** (QUOTIDIEN) 396-312L. **F. fonct., int. II** (QUOTIDIEN) 396-320L. **F. fonct., avancé I** (QUOTIDIEN)		
11h. à 12h.	396-300L. **Phonétique II** (QUOTIDIEN) 396-302L. **Grammaire écrite** 396-320L. **F. fonc., avancé II** (QUOTIDIEN) 396-311L. **Traduction** 396-341L. **Théâtre québécois contemp.**		
13h. à 14h.	396-300L. **Phonétique III** (QUOTIDIEN) 396-322L. **Stylistique et gram. comp.**	13h.30 à 15h.	396-340L. **Le Théâtre de l'absurde** 396-316L. **L'Atelier d'écriture**
14h. à 15h.	396-380L. **Connaissance du Québec**	15h. à 16h.30	396-335L. **Théâtre en action**

EMPLOI DU TEMPS

Division "C"

Horaire	Lundi – Mercredi		Horaire	Mardi – Jeudi	
9h. à 10h.	396-503L.	**Franc. fonctionnel (avancé)** **Prévoir une heure le vendredi matin.**			
10h.30 à 12h.	396-507L.	**Voc. et Média: Publicité**	10h.30 à 12h.	396-520L. 396-550L.	**Mauriac, romancier du réel** **Cinéma**
13h.30 à 15h.	396-510L.	**Atelier de création littéraire**	13h.30 à 15h.	396-561L.	**Sociologie de la famille québécoise**
15h. à 16h.30	396-509L.	**Linguistique descriptive**	15h. à 16h.30	396-512L. 396-531L.	**Traduction** **M. Tremblay ou le théâtre de la récrimination**

EMPLOI DU TEMPS

Division "D"

Horaire	Lundi – Mercredi		Horaire	Mardi – Jeudi
8h.30 à 10h.	396-604L.	Phonétique générale	396-674L.	Gide: le "contemporain capital"
	396-673L.	Valéry et l'art		
10h. à 11h.30	396-606L.	Asp. socioling. du français	396-632L.	Montaigne et nous
	396-642L.	Pascal: le tragique de l'existence		
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